FLAMINGO FINAL

CONFIDENTIAL

INPUT QUESTIONNAIRE

CATALOG. NO. YGT9
SIC. CODE
SIZE CODE
AREA CODE
STUDY CODE
DATES 8 6
MM DD YY

STUDY TITLE:
TYPE OF INTERVIEW: ☐ VENDOR ☒ TELEPHONE
☒ USER ☐ ON-SITE
☐ MAIL

INTERVIEWER: _____

COMPANY: _____ CO. TYPE: _____

ADDRESS: _____ SALES: _____

_____ NO. EMPL: _____

_____

_____

INDUSTRY ☐

☐ DISCRETE MANUFACTURING ☐ UTILITIES ☐ INSURANCE
☐ PROCESS MANUFACTURING ☐ RETAIL ☐ GOVERNMENT - FEDERAL
☐ TRANSPORTATION ☐ BANKING ☐ GOVERNMENT - STATE & LOCAL
☐ MEDICAL ☐ WHOLESALE ☐ EDUCATION
☐ SERVICES ☐ OTHER

INTERVIEWS

NAME	TITLE	TELEPHONE NO.
FLAMINGO FINAL		

SUMMARY _____

REFERENCES _____

FLAMINGO INTRODUCTION

VERSION 1a.

Good morning (afternoon). This is _____ calling from INPUT, an international research and planning firm. We are currently engaged in a major national study designed to examine new and advanced uses of personal computers.

By participating in this study you will have the opportunity to influence the development of future product and service offerings for PC's by a major vendor. Your identity and your responses will remain completely confidential and will be used for statistical analysis only. In return for your cooperation we will send you an executive summary of the study so that you may compare your needs and applications with those of your peers. May we begin? Thank you.

FLAMINGO CONCEPTUAL TEST - USER

(AFTER SCREENER)

1. Thank you. We would like to begin understanding a little about the type of PC you are using. First is it an IBM PC, PC/XT or PC/AT or another type?

   A. PC _____ B. PC/XT _____ C. PC/AT _____

   D. Other _____ E. DK _____ F. NA _____ G. REF_____

1a. IF OTHER: What make and model of PC are you using? _____

   _____

2. What is the memory capacity of the machine?

   A. 64K _____ B. 128K _____ C. 256k _____

   D. 512k _____ E. 640k _____ F. Other _____ (specify)

   G. DK _____ H. NA _____ I. REF _____

3. Does your PC have a hard disk?

   A. YES _____ B. NO _____ C. DK _____

   D. NA _____ E. REF _____

3a. IF YES: What is its capacity?

   A. 10M _____ B. 20M _____ C. 30M _____

   D. Other _____ (specify) E. DK _____

INPUT

4. I see. Is your monitor Monochrome or Color?

A. Mono _____ B. Color _____ C. DK _____

D. NA _____ E. REF _____

5. Can you currently do graphs on your monitor?

A. YES _____ B. NO _____ C. DK _____ E. NA _____

F. REF _____

6. Is there a printer attached to your PC?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

6a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

7. Is there a printer available to you which you share with others?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

7a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

INPUT

8. Thank you. We've collected almost all the basic data which we'll need, but there are just a few more of these technical questions. Can your PC communicate with other PC's or systems or would you classify your PC as "stand-alone" without the ability to connect to other devices?

A. Communicating _ _____ B. Standalone _____ C. DK _____

D. NA _____ E. REF _____

8a. IF COMMUNICATING: Which of the following best describes your PC's communications capabilities? You may, of course, answer in more than one category.

A. Communicates by dial-up telephone to a company mainframe computer via a Value-Added Network _____

B. Communicates by dial-up telephone directly to company mainframe _____

C. Communicates by dedicated line to a company mainframe computer _____

D. Is a part of a Local Area Network which does <u>not</u> communicate outside the department _____

E. Is a part of a Local Area Network which communicates outside the department to another lan or host? _____

F. Connects to an electronic mail system run by your company _ _____

G. Connects to an electronic mail system run by a third party _____

H. Communicates by regular telephone to another company computer _____

I. Are there any other communications modes you use? (specify) _____

_____

_____

9. Thank you. That concludes our basic technical section and we would now like to move on to applications which you may be using. To begin, about how many hours do you spend in a typical workday using your PC? (INT: PROMPT IF NECESSARY)

A. Hours _____ B. DK _____ C. NA _____ D. REF _____

10. Of this time, about what percentage is spent inputting data or text at the keyboard?

A. % _____ B. DK _____ C. NA _____ D. REF _____

11. Thinking now about the applications you are using, which of the following do you use in a typical business week?

A.	Spreadsheet such as Lotus?	Uses ___	Does Not Use ___	Rank ___
B.	Wordprocessor such as Wordstar?	Uses ___	Does Not Use ___	Rank ___
C.	Database manager such as DB2?	Uses ___	Does Not Use ___	Rank ___
D.	A business graphics package?	Uses ___	Does Not Use ___	Rank ___
E.	An engineering CAD/CAM package?	Uses ___	Does Not Use ___	Rank ___
F.	Electronic mail package?	Uses ___	Does Not Use ___	Rank ___
G.	A terminal emulation package so that your PC behaves like a 3270 or other terminal?	Uses ___	Does Not Use ___	Rank ___
H.	Any other applications packages or custom program? (SPECIFY BELOW)	Uses ___	Does Not Use ___	Rank ___

11a. Package or custom application: _____

_____

12. Now thinking about the applications we have discussed, which would you say is the most important? (INT: RANK EACH IN SPACE ABOVE) The second most important? Third? Fourth? (INT: RANK ALL APPLICATIONS MENTIONED)

13. Thank you. Now I would like to describe to you several Personal Computer capabilities which may be unavailable at the present time or are only available in a limited fashion. In responding we would like you to rate how useful such a capability would be in the context of the work you do in your job. For this we will use a scale of one to five (1-5). On this scale one is defined as "not useful" while five is defined as "very useful."

First, how useful would it be to have your PC function as a telephone answering machine on our scale of one to five?

TELEPHONE ANSWERING MACHINE 1 2 3 4 5 DK _____

NA _____ REF _____

14. Have your PC function as an automatic telephone dialer?

TELEPHONE DIALER 1 2 3 4 5 DK _____ NA _____

REF_____

15. Use your PC as a voice mail mail box to send and receive messages from other PC's or with a central voice mail system?

VOICE MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

16. Have your PC translate text electronic mail messages to understandable voice messages so that you could receive electronic mail from any touch tone telephone without a special terminal?

TEXT/VOICE TRANSLATION 1 2 3 4 5 DK _____ NA _____

REF _____

INPUT

17. Have your PC act like a FAX (facsimile) machine and be able to send and receive documents from or to FAX machines?

FAX CAPABILITY 1 2 3 4 5 DK _____ NA _____ REF _____

18. Use a FAX machine as an input device for a word processor on your PC instead of a keyboard?

FAX INPUT 1 2 3 4 5 DK _____ NA _____

REF _____

18a. Use a FAX machine as an input device for graphical material to your PC?

FAX GRAPHIC 1 2 3 4 5 DK _____ NA _____

REF _____

19. Use a FAX machine as a printer for text and graphics for your PC?

FAX PRINTER 1 2 3 4 5 DK _____ NA _____ REF _____

20. Thank you. Now let's deal with a few more conventional functions for a moment. How useful — on the same one to five scale — would it be to access data bases from your PC on a company host computer?

DB ACCESS 1 2 3 4 5 DK _____ NA _____

REF _____

20a. Access data bases using ordinary English so you would not have to learn special terms and techniques?

1 2 3 4 5 DK _____ NA _____ REF _____

21. Access host-based applications?

HOST APPLICATIONS 1 2 3 4 5 DK _____ NA _____

REF _____

21a. Access host applications using ordinary English so you would not have to learn terms and techniques?

1 2 3 4 5 DK _____ NA _____ REF _____

22. Control host-based jobs from your PC?

HOST CONTROL 1 2 3 4 5 DK _____ NA _____ REF _____

23. Use your PC for electronic mail within your company?

IN-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

24. Use your PC for electronic mail outside your company?

OUT-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

25. I see. Now moving along to the area of text processing, we would like to have you evaluate the usefulness of some text functions. Once again, certain of these functions are quite advanced. While they may not be in common use, all are within the reach of today's known technology.

First, how useful would it be to place pages of typewritten text into a PC using a special scanner that eliminates keying in the text?

TEXT SCAN 1 2 3 4 5 DK _____ NA _____

REF _____

26. Once the text is scanned into the PC, edit the text with an ordinary personal computer word processing package?

TEXT EDIT 1 2 3 4 5 DK _____ NA _____

REF _____

27. Store the scanned and edited text in your PC?

STORE TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

28. Store text on a mainframe computer in a library where it would be accessible by such criteria as date, title, author or subject with access under your control.

MAINFRAME STORAGE 1 2 3 4 5 DK _____ NA _____

REF _____

29. Store text files on a multi-user Office Automation system with appropriate security and access similar to the mainframe case?

O/A SYSTEM STORE 1 2 3 4 5 DK _____ NA _____

REF _____

30. Send and receive text documents from or to another PC in standard IBM DCA (Document Content Architecture) format so that these documents can be revised?

SEND/RECEIVE REVISABLE 1 2 3 4 5 DK _____

NA _____ REF _____

31. Send and receive documents from or to another PC in a form that cannot be easily revised?

SEND/RECEIVE NON-REVISE 1 2 3 4 5 DK _____ NA _____

REF _____

32. Send and receive documents in revisable form from standard office word processing systems such as Wang, DEC, Xerox and IBM?

O/A SEND-RECEIVE 1 2 3 4 5 DK _____ NA _____

REF _____

33. Send the output of a mainframe computer (such as a financial report) to a standard office automation system?

MF OUTPUT TO O/A 1 2 3 4 5 DK _____ NA _____

REF _____

34. Send and receive documents between office automation systems from different vendors such as a DEC document to a Wang System?

INTER-VENDOR TRANSM. 1 2 3 4 5 DK _____ NA _____

REF _____

35. Search the texts of stored documents for a particular word or phrase?

TEXT SEARCH 1 2 3 4 5 DK _____ NA _____ REF _____

35a. How useful would it be to have these "document translation" capabilities provided by an outside service company if your company did not offer them internally?

1 2 3 4 5 DK _____ NA _____ REF _____

35b. Why is that? _____

_____

_____

_____

36. Moving now to a related area we would like to focus on the processing of images-pictures, graphs, forms, signatures, logotypes and similar non-textual items.

First, how useful would it be to be able to store in a personal computer a document with a signature?

SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

37. And how useful — on a one to five scale — would it be store a document on a letterhead?

LETTERHEAD 1 2 3 4 5 DK _____ NA _____

REF _____

38. How about a document with a letterhead and signature?

LETTERHEAD/SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

39. Using a scanning device, store in a PC a drawing or sketch?

DRAWING 1 2 3 4 5 DK _____ NA _____ DK _____

40. Modify or add to that drawing or sketch using an ordinary PC graphics package?

MODIFY DRAWING 1 2 3 4 5 DK _____ NA _____ REF _____

INPUT

41. Alter the size or position of a drawing on a page?

ALTER DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

42. Position text or captions on a drawing?

TEXT ON DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

43. Send drawings or sketches to or from other personal computers?

1 2 3 4 5 DK _____ NA _____ REF _____

44. Store and retrieve drawings or sketches on a mainframe computer in a library with appropriate security?

STORE ON MF 1 2 3 4 5 DK _____ NA _____ REF _____

45. Store and retrieve page from books or magazines on a PC?

BOOK PAGES 1 2 3 4 5 DK _____ NA _____

REF _____

46. Store documents in scientific notation or foreign languages with non-english characters in their alphabets on a PC?

FOREIGN LANGUAGE 1 2 3 4 5 DK _____ NA _____

REF _____

46a. How useful would it be to have these image services provided by an outside service company if your company did not offer them internally?

1 2 3 4 5 DK _____ NA _____ REF _____

46b. Why is that? _____

_____

_____

_____

47. We are now in our last area of product utility, that of combined text and image capability. How useful would you find it to combine various pieces of text and images on document pages in a PC?

COMBINED TEXT/IMAGE 1 2 3 4 5 DK _____ NA _____

REF _____

48. Using a scanning device, put documents with forms, images and text into a PC?

SCAN FORMS 1 2 3 4 5 DK _____ NA _____

REF _____

49. Be able to send or receive from other PC's documents combining images and text in editable form?

SEND/RCV. EDITABLE DOCUMENTS 1 2 3 4 5 DK _____

NA _____ REF _____

50. Be able to store combined image/text documents as a part of a library on a LAN file server to use yourself or to share with proper security?

LAN STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

51. Have the ability to store image and text as a part of a library on a central computer for your own use and to share with others with proper security?

MF STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

51a. How useful would it be to have these combined text and image services provided by an outside service company if your company did not offer them?

1 2 3 4 5 DK _____ NA _____ REF _____

51b. Why is that? _____

_____

_____

_____

52. In a slightly different vein, how useful would it be to be able to attach spoken (voice) explanations to images and text?

VOICE/IMAGES-TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

53. In terms of overall evaluation, how <u>important</u> would it be to have for regular use in your job the telephone-related capabilities we discussed earlier such as voice mail and answering machine capabilities? Please rate the importance of this class of capabilities on a scale of one to five with one being unimportant and five being very important.

PHONE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

53a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

53b. Why is that? _____

_____

_____

54. Think now about the image capabilities — PC storage of images with a scanner, the ability to modify images and related capabilities — how important would these be in your job?

IMAGE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

54a How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

54b. Why is that? _____

_____

_____

55. With respect to scanning text into a PC without using the keyboard, how important overall would this be in your job?

SCAN TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

55a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

55b. Why is that? _____

_____

_____

56. Again on an overall basis, how important are the combined text/image capabilities we have been discussing in your job?

IMAGE/TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

56a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

56b. Why is that? _____

_____

_____

57. Thinking now about the cost for the complete range of voice, image, and text we have been discussing, how interested would you be in purchasing these additional capabilities for your PC if they cost $6,000? We are again using a one to five scale with one being "not very interested" and five being "very interested."

6K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

58. How interested would you be at $4,000 in purchasing these capabilities?

4K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

59. What would your interest be at $2,000?

2K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

60. Now as the final portion of the interview we would like to collect a few facts that will allow us to classify your responses by departmental function within your company. What is the name of your department?

DEPT. NAME _____

(INT: 60a IS OPTIONAL. ASK ONLY IF NOT OBVIOUS FROM NAME)

60a. In a few words, how would you describe the main work of your department _____

_____

_____

61. About how many people work in your department?

_____ DK _____ NA _____ REF _____

62. Of these, what proportion have personal computers?

% _____ DK _____ NA _____ REF _____

63. With respect to this location, what is the principal business conducted here? _____

_____

_____

_____

_____

Thank you. That completes the interview. We greatly appreciate your cooperation and hope you have enjoyed the opportunity to respond to some advanced PC applications. At the conclusion of the study we will be sending you a brief summary of the results so that you can compare your responses with those of other PC users.

CONFIDENTIAL

INPUT QUESTIONNAIRE

CATALOG. NO. Y G T 9
SIC. CODE
SIZE CODE
AREA CODE
STUDY CODE
DATES 8 6
MM DD YY

STUDY TITLE:
TYPE OF INTERVIEW: ☐ VENDOR ☒ TELEPHONE
☒ USER ☐ ON-SITE
☐ MAIL

INTERVIEWER: _____

COMPANY: _____ CO. TYPE: _____

ADDRESS: _____ SALES: _____

_____ NO. EMPL: _____

_____

_____

INDUSTRY ☐

☐ DISCRETE MANUFACTURING	☐ UTILITIES	☐ INSURANCE
☐ PROCESS MANUFACTURING	☐ RETAIL	☐ GOVERNMENT - FEDERAL
☐ TRANSPORTATION	☐ BANKING	☐ GOVERNMENT - STATE & LOCAL
☐ MEDICAL	☐ WHOLESALE	☐ EDUCATION
☐ SERVICES	☐ OTHER	

INTERVIEWS

NAME	TITLE	TELEPHONE NO.

SUMMARY _____

_____

_____

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REFERENCES _____

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FLAMINGO INTRODUCTION

VERSION 1a.

Good morning (afternoon). This is _____ calling from INPUT, an international research and planning firm. We are currently engaged in a major national study designed to examine new and advanced uses of personal computers.

By participating in this study you will have the opportunity to influence the development of future product and service offerings for PC's by a major vendor. Your identity and your responses will remain completely confidential and will be used for statistical analysis only. In return for your cooperation we will send you an executive summary of the study so that you may compare your needs and applications with those of your peers. May we begin? Thank you.

FLAMINGO CONCEPTUAL TEST - USER

(AFTER SCREENER)

1. Thank you. We would like to begin understanding a little about the type of PC you are using. First is it an IBM PC, PC/XT or PC/AT or another type?

   A. PC _____ B. PC/XT _____ C. PC/AT _____

   D. Other _____ E. DK _____ F. NA _____ G. REF _____

1a. IF OTHER: What make and model of PC are you using? _____

   _____

2. What is the memory capacity of the machine?

   A. 64K _____ B. 128K _____ C. 256k _____

   D. 512k _____ E. 640k _____ F. Other _____ (specify)

   G. DK _____ H. NA _____ I. REF _____

3. Does your PC have a hard disk?

   A. YES _____ B. NO _____ C. DK _____

   D. NA _____ E. REF _____

3a. IF YES: What is its capacity?

   A. 10M _____ B. 20M _____ C. 30M _____

   D. Other _____ (specify) E. DK _____

INPUT

4. I see. Is your monitor Monochrome or Color?

A. Mono _____ B. Color _____ C. DK _____

D. NA _____ E. REF _____

5. Can you currently do graphs on your monitor?

A. YES _____ B. NO _____ C. DK _____ E. NA _____

F. REF _____

6. Is there a printer attached to your PC?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

6a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

7. Is there a printer available to you which you share with others?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

7a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

INPUT

8. Thank you. We've collected almost all the basic data which we'll need, but there are just a few more of these technical questions. Can your PC communicate with other PC's or systems or would you classify your PC as "stand-alone" without the ability to connect to other devices?

A. Communicating _ _____ B. Standalone _____ C. DK _____

D. NA _____ E. REF _____

8a. IF COMMUNICATING: Which of the following best describes your PC's communications capabilities? You may, of course, answer in more than one category.

A. Communicates by dial-up telephone to a company mainframe computer via a Value-Added Network _____

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D. Is a part of a Local Area Network which does <u>not</u> communicate outside the department _____

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F. Connects to an electronic mail system run by your company _ _____

G. Connects to an electronic mail system run by a third party _____

H. Communicates by regular telephone to another company computer _____

I. Are there any other communications modes you use? (specify) _____

_____

_____

9. Thank you. That concludes our basic technical section and we would now like to move on to applications which you may be using. To begin, about how many hours do you spend in a typical workday using your PC? (INT: PROMPT IF NECESSARY)

A. Hours _____ B. DK _____ C. NA _____ D. REF _____

10. Of this time, about what percentage is spent inputting data or text at the keyboard?

A. % _____ B. DK _____ C. NA _____ D. REF _____

11. Thinking now about the applications you are using, which of the following do you use in a typical business week?

A.	Spreadsheet such as Lotus?	Uses ___	Does Not Use ___	Rank ___
B.	Wordprocessor such as Wordstar?	Uses ___	Does Not Use ___	Rank ___
C.	Database manager such as DB2?	Uses ___	Does Not Use ___	Rank ___
D.	A business graphics package?	Uses ___	Does Not Use ___	Rank ___
E.	An engineering CAD/CAM package?	Uses ___	Does Not Use ___	Rank ___
F.	Electronic mail package?	Uses ___	Does Not Use ___	Rank ___
G.	A terminal emulation package so that your PC behaves like a 3270 or other terminal?	Uses ___	Does Not Use ___	Rank ___
H.	Any other applications packages or custom program? (SPECIFY BELOW)	Uses ___	Does Not Use ___	Rank ___

11a. Package or custom application: _____

_____

12. Now thinking about the applications we have discussed, which would you say is the most important? (INT: RANK EACH IN SPACE ABOVE) The second most important? Third? Fourth? (INT: RANK ALL APPLICATIONS MENTIONED)

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First, how useful would it be to have your PC function as a telephone answering machine on our scale of one to five?

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16. Have your PC translate text electronic mail messages to understandable voice messages so that you could receive electronic mail from any touch tone telephone without a special terminal?

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19. Use a FAX machine as a printer for text and graphics for your PC?

FAX PRINTER 1 2 3 4 5 DK _____ NA _____ REF _____

20. Thank you. Now let's deal with a few more conventional functions for a moment. How useful — on the same one to five scale — would it be to access data bases from your PC on a company host computer?

DB ACCESS 1 2 3 4 5 DK _____ NA _____

REF _____

20a. Access data bases using ordinary English so you would not have to learn special terms and techniques?

1 2 3 4 5 DK _____ NA _____ REF _____

21. Access host-based applications?

HOST APPLICATIONS 1 2 3 4 5 DK _____ NA _____

REF _____

21a. Access host applications using ordinary English so you would not have to learn terms and techniques?

1 2 3 4 5 DK _____ NA _____ REF _____

22. Control host-based jobs from your PC?

HOST CONTROL 1 2 3 4 5 DK _____ NA _____ REF _____

23. Use your PC for electronic mail within your company?

IN-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

24. Use your PC for electronic mail outside your company?

OUT-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

25. I see. Now moving along to the area of text processing, we would like to have you evaluate the usefulness of some text functions. Once again, certain of these functions are quite advanced. While they may not be in common use, all are within the reach of today's known technology.

First, how useful would it be to place pages of typewritten text into a PC using a special scanner that eliminates keying in the text?

TEXT SCAN 1 2 3 4 5 DK _____ NA _____

REF _____

26. Once the text is scanned into the PC, edit the text with an ordinary personal computer word processing package?

TEXT EDIT 1 2 3 4 5 DK _____ NA _____

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27. Store the scanned and edited text in your PC?

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28. Store text on a mainframe computer in a library where it would be accessible by such criteria as date, title, author or subject with access under your control.

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29. Store text files on a multi-user Office Automation system with appropriate security and access similar to the mainframe case?

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REF _____

30. Send and receive text documents from or to another PC in standard IBM DCA (Document Content Architecture) format so that these documents can be revised?

SEND/RECEIVE REVISABLE 1 2 3 4 5 DK _____

NA _____ REF _____

31. Send and receive documents from or to another PC in a form that cannot be easily revised?

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32. Send and receive documents in revisable form from standard office word processing systems such as Wang, DEC, Xerox and IBM?

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INTER-VENDOR TRANSM. 1 2 3 4 5 DK _____ NA _____

REF _____

35. Search the texts of stored documents for a particular word or phrase?

TEXT SEARCH 1 2 3 4 5 DK _____ NA _____ REF _____

35a. How useful would it be to have these "document translation" capabilities provided by an outside service company if your company did not offer them internally?

1 2 3 4 5 DK _____ NA _____ REF _____

35b. Why is that? _____

_____

_____

_____

36. Moving now to a related area we would like to focus on the processing of images-pictures, graphs, forms, signatures, logotypes and similar non-textual items.

First, how useful would it be to be able to store in a personal computer a document with a signature?

SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

37. And how useful — on a one to five scale — would it be store a document on a letterhead?

LETTERHEAD 1 2 3 4 5 DK _____ NA _____

REF _____

38. How about a document with a letterhead and signature?

LETTERHEAD/SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

39. Using a scanning device, store in a PC a drawing or sketch?

DRAWING 1 2 3 4 5 DK _____ NA _____ DK _____

40. Modify or add to that drawing or sketch using an ordinary PC graphics package?

MODIFY DRAWING 1 2 3 4 5 DK _____ NA _____ REF _____

41. Alter the size or position of a drawing on a page?

ALTER DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

42. Position text or captions on a drawing?

TEXT ON DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

43. Send drawings or sketches to or from other personal computers?

1 2 3 4 5 DK _____ NA _____ REF _____

44. Store and retrieve drawings or sketches on a mainframe computer in a library with appropriate security?

STORE ON MF 1 2 3 4 5 DK _____ NA _____ REF _____

45. Store and retrieve page from books or magazines on a PC?

BOOK PAGES 1 2 3 4 5 DK _____ NA _____

REF _____

46. Store documents in scientific notation or foreign languages with non-english characters in their alphabets on a PC?

FOREIGN LANGUAGE 1 2 3 4 5 DK _____ NA _____

REF _____

46a. How useful would it be to have these image services provided by an outside service company if your company did not offer them internally?

1 2 3 4 5 DK _____ NA _____ REF _____

46b. Why is that? _____

_____

_____

_____

47. We are now in our last area of product utility, that of combined text and image capability. How useful would you find it to combine various pieces of text and images on document pages in a PC?

COMBINED TEXT/IMAGE 1 2 3 4 5 DK _____ NA _____

REF _____

48. Using a scanning device, put documents with forms, images and text into a PC?

SCAN FORMS 1 2 3 4 5 DK _____ NA _____

REF _____

49. Be able to send or receive from other PC's documents combining images and text in editable form?

SEND/RCV. EDITABLE DOCUMENTS 1 2 3 4 5 DK _____

NA _____ REF _____

50. Be able to store combined image/text documents as a part of a library on a LAN file server to use yourself or to share with proper security?

LAN STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

51. Have the ability to store image and text as a part of a library on a central computer for your own use and to share with others with proper security?

MF STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

51a. How useful would it be to have these combined text and image services provided by an outside service company if your company did not offer them?

1 2 3 4 5 DK _____ NA _____ REF _____

51b. Why is that? _____

_____

_____

_____

52. In a slightly different vein, how useful would it be to be able to attach spoken (voice) explanations to images and text?

VOICE/IMAGES-TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

53. In terms of overall evaluation, how <u>important</u> would it be to have for regular use in your job the telephone-related capabilities we discussed earlier such as voice mail and answering machine capabilities? Please rate the importance of this class of capabilities on a scale of one to five with one being unimportant and five being very important.

PHONE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

53a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

53b. Why is that? _____

_____

_____

54. Think now about the image capabilities — PC storage of images with a scanner, the ability to modify images and related capabilities — how important would these be in your job?

IMAGE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

54a How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

54b. Why is that? _____

_____

_____

55. With respect to scanning text into a PC without using the keyboard, how important overall would this be in your job?

SCAN TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

55a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

55b. Why is that? _____

_____

_____

56. Again on an overall basis, how important are the combined text/image capabilities we have been discussing in your job?

IMAGE/TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

56a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

56b. Why is that? _____

_____

_____

57. Thinking now about the cost for the complete range of voice, image, and text we have been discussing, how interested would you be in purchasing these additional capabilities for your PC if they cost $6,000? We are again using a one to five scale with one being "not very interested" and five being "very interested."

6K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

58. How interested would you be at $4,000 in purchasing these capabilities?

4K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

59. What would your interest be at $2,000?

2K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

60. Now as the final portion of the interview we would like to collect a few facts that will allow us to classify your responses by departmental function within your company. What is the name of your department?

DEPT. NAME _____

(INT: 60a IS OPTIONAL. ASK ONLY IF NOT OBVIOUS FROM NAME)

60a. In a few words, how would you describe the main work of your department _____

_____

_____

61. About how many people work in your department?

_____ DK _____ NA _____ REF _____

62. Of these, what proportion have personal computers?

% _____ DK _____ NA _____ REF _____

63. With respect to this location, what is the principal business conducted here? _____

_____

_____

_____

_____

Thank you. That completes the interview. We greatly appreciate your cooperation and hope you have enjoyed the opportunity to respond to some advanced PC applications. At the conclusion of the study we will be sending you a brief summary of the results so that you can compare your responses with those of other PC users.

YGT9

INPUT®

Parsippany Place Corporate Center, Suite 201
959 Route 46 East, Parsippany, NJ 07054

(201) 299-6999

7/9/86

Dear Pat:

Pursuant to your request, here are the lists of the Flamingo respondents for both user and MIS groups. As you can see, they are "good" names. You will also note that we added telcos to the MIS list.

regards,

Don Fostle

FLAMINGO USER
RESPONDENT COS.

PAGE 1 CONFIDENTIAL

CO #	COMPANIES
1	JOHN HANCOCK MUTUAL
2	PRUDENTIAL
3	SOUTH WESTERN LIFE
4	CT. GENERAL LIFE
5	MONY FINANCIAL
6	MO. MUTUAL
7	CT. MUTUAL
8	PHOENIX MUTUAL
9	TRAVELERS
10	HOME LIFE INSURANCE
11	EQUITABLE LIFE
12	METROPOLITAN LIFE
13	PROVIDENT MUTUAL
14	TRANSAMERICA LIFE
15	NORTHWESTERN MUTUAL
16	MUTUAL OF OMAHA
17	GENERAL AMERICAN LIFE
18	BANKERS LIFE INSURANCE
19	FRANKLIN LIFE
20	CAPITOL LIFE
21	AMERICAN BANKERS LIFE
22	MINNESOTA MUTUAL LIFE
23	NEW YORK LIFE
24	KEMPER INSURANCE
25	NATIONWIDE LIFE
26	TEXAS COMMERCIAL BANK
27	BARNETT BANK
28	WELLS FARGO
29	BANK OF BOSTON
30	CITI BANK
31	PNC FINANCIAL
32	FIRST CITY BANCORP
33	FIRST [illegible] CORP
34	SECURITY PACIFIC CORP
35	MANUFACTURERS HANOVER TRUST
36	UNITED BANK SHARES
37	BANC ONE CORPORATION
38	NATIONAL CITY CORP
39	[illegible] BANK
40	
41	MORGAN BANCORP
42	MARINE MIDLAND
43	BANK OF NY CO
44	YELLOW
45	BANKERS TRUST
46	FIRST INTERSTATE
47	EUROPEAN AMERICAN BANK
48	SOUTHEAST BANKING CORP
49	WACHOVIA CORP
50	BANK OF NEW ENGLAND
51	REPUBLIC NATIONAL BANK
52	
53	
54	
55	
56	
57	

PAGE 2 CONFIDENTIAL

CO #	COMPANIES
51	SHELL OIL
52	BEATRICE-LS FOODS
53	AT&T
54	EXXON
55	DOW CHEMICAL
56	[illegible] CORP
57	FORD MOTOR CO
58	GENERAL MOTORS
59	[illegible] PACKARD
60	UNION CARBIDE
61	EASTMAN KODAK
62	PEPSI CO.
63	GENERAL FOODS
64	R.J. REYNOLDS
65	U.S. STEEL
66	CATERPILLER TRACTOR
67	DIGITAL EQUIPMENT
68	ROCKWELL
69	W.R. GRACE
70	COCA-COLA
71	STANDARD OIL
72	ASHLAND OIL
73	AMERICAN BRANDS
74	TEXAS INSTRUMENT
75	PPG INDUSTRIES
76	COLGATE PALMOLIVE
77	IBM
78	PILLSBURY CO
79	BURROUGHS CORP.
80	MOBIL
	TOTAL 1 OF 2 PLANS
	TOTAL 1
	TOTAL 2
	TOTAL 3

1411PSK/B

CONFIDENTIAL

FLAMINGO MIS
RESPONDENT COS.

PAGE 1

CO # COMPANIES

[illegible]
[illegible]
2 CHAMPION INTERNATIONAL
3 COCA COLA
4 CONAGRA
5 [illegible]
6 [illegible]
7 [illegible]
8 LTV READ BRADE
9 MC DONNELL DOUGLAS
10 NORTHROP CORP
11 PAYTHEON
12 W.R.GRACE
13 WESTINGHOUSE ELEC
14 ALLIED BANKSHARES
15 COMERICA
16 CONN. BANK & TRUST
17 EAST AMERICAN BANK
18 FIRST ATLANTIC CORP
19 [illegible]
20 MARINE MID BANK
21 MARYLAND NATIONAL
22 MELLON BANK
23 NATIONAL CITY CORP
24 REPUBLIC NATIONAL BANK
25 U.S. BANCORP CORP
26 TEXAS COMMERCIAL BANK
27 US BANCORP
28 AMERICAN NATIONAL
29 [illegible]
30 [illegible]
31 [illegible]
32 KEMPER INSURANCE
33 MASS MUTUAL
34 MUTUAL OF AMERICA
35 N.Y. MUTUAL LIFE
36 NEW YORK LIFE
37 MICHIGAN BELL
38 NEVADA BELL
39 NEW JERSEY BELL
40 PACIFIC N.W. BELL

14112SK.B

PURCHASE ORDER

GTE Data Services

GTE

SHIPMENT HEREUNDER CONSTITUTES ACCEPTANCE BY VENDOR OF ALL PROVISIONS HEREOF INCLUDING THOSE ON THE REVERSE SIDE.

SEND ALL INVOICES, IN TRIPLICATE, TO:
GTE DATA SERVICES
GENERAL ACCOUNTING
P.O. BOX 1548
TAMPA, FLORIDA 33601

SEND ALL ACKNOWLEDGEMENTS, SHIPPING SCHEDULES, AND CORRESPONDENCE TO:
GTE DATA SERVICES
PURCHASING
P.O. BOX 1548
TAMPA, FLORIDA 33601

PURCHASE ORDER NO. MUST APPEAR ON ALL PACKAGES, INVOICES, AND CORRESPONDENCE.

PURCHASE ORDER NO. 54670

DATE 4/4/86

DATE REQUIRED
ASAP

TO:
- Input
- Attn: Don Fostle
- 1943 Landings Drive
- Mountain View, CA 94043

SHIP TO:
GTE DATA SERVICES INCORPORATED
- 111 East Madison Street
- Tampa, FL 33602
-

ATTN OF: Pat Price

DC 164

ORIGINATED BY	DEPARTMENT	GEN. LEDGER ACCT. NO	REQ./CONTROL NO	BUDGET CONT. NO	DATE REQ. REC'D	TERMS	F.O.B.
Price, P	CSDV	32-600/774	18815	405	4/4/86	As Due	N/A

QUANTITY RECEIVED	QUANTITY ORDERED	UNIT	DESCRIPTION	ESTIMATED COST UNIT COST	ESTIMATED COST TOTAL
			Contract with INPUT for market analysis		38,750.00
			Expenses not to exceed		1,937.50
					$40,687.50
			In accordance with letter agreement dated March 25, 1986		

GTE DATA SERVICES
BY W. R. Stallings
PURCHASING REPRESENTATIVE

ch

DS0219 (Rev. 11/83)

FOLD

Practice AS-10

VENDOR COPY

INPUT® Y6T9

Parsippany Place Corporate Center, Suite 201, 959 Route 46 East, Parsippany, NJ 07054 (201) 299-6999

September 17, 1986

Mrs. Patricia H. Price
Manager-New Business Ventures
GTE Data Services
First Florida Tower
P.O. Box 1548
Tampa, Florida 33601

Dear Pat:

Pursuant to your request for our response to the idea of using Soft Switch as an initial distribution channel, it is our view that this is viable based on the data you shared.

Given the apparent structure of the mark-ups, it seems possible that this approach could have higher profitability for GTEDS than setting up its own marketing organization which would be a time-consuming and costly process.

We would agree that Soft Switch has excellent access to important decision makes and apparent skill in selling related products. Flamingo would complement their current offerings well.

Less positive is the fact that it is usually quite difficult to exercise appropriate control over these types of distribution arrangements. You might get around this by negotiation a "minimum" dollar or unit commitment for S.S. at a later stage and by some joint calling activity.

As the sole distiribution channel, we would have strong reservations about S.S. as they would have the only access to the market. As an expedient with an emphasis on a fast start and with the potential to supplement them with other distribution in the future, this is a plausible way to begin marketing quickly.

While much hinges on the accuracy of Soft Switch forecasts and their general diligence, the minimum investment required to start development would certainly seem warranted. All-in-all, the data and assumptions you have presented seem reasonable and we would endorse your approach.

Sincerely,

D.W. Fostle
Vice President

DWF/jh

GTE

GTE Data Services Incorporated
First Florida Tower
P. O. Box 1548
Tampa, Florida 33601
813 224-3131

March 5, 1986

RCVD 3/12/86
DWF

Mr. D. W. Fostle, Vice President
INPUT
959 Route 46 East, Suite 201
Parsippany, NJ 07054

Dear Mr. Fostle:

Enclosed in duplicate is the letter agreement dated February 24, 1986 covering services to be provided by INPUT to GTE Data Services Incorporated (GTEDS). Both copies of the agreement have been signed on behalf of GTEDS by David K. Denmark, Procurement Director. Also, please note that we have inserted a word on page 2 and a sentence under "SCHEDULE & FEES" on page 4, and Mr. Denmark has initialled these additions.

We would appreciate your executing the acceptance on behalf of INPUT and initialling the above-referred to additions. One fully executed copy of the agreement should be retained for your file and the other returned to me for our file.

NOTE

Also enclosed is GTEDS' Purchase Order No. 54253. Please note that this number must appear on your invoices.

If you have any questions or I may be of any assistance, please feel free to give me a call at (813) 224-3746.

Sincerely,

Liz Stalvey

Elizabeth A. Stalvey
Contract Administrator

COPY HAS BEEN RETURNED AS REQUESTED.

Enclosures

cc: P. Price

INPUT®

Parsippany Place Corporate Center, Suite 201, 959 Route 46 East, Parsippany, NJ 07054 (201) 299-6999

February 24, 1986

Mrs. Patricia H. Price
Manager - New Business Ventures
GTE Data Services
First Florida Tower
P.O. Box 1548
Tampa, FL 33601

Dear Mrs. Price:

Based on recent meetings with you and others within GTEDS line and senior management, INPUT is pleased to present this proposal for assistance in acquisition and joint venture activities.

While the concepts are similar to the earlier proposal, we are now able to recommend certain specific activities based not only on the meetings but also taking into account the excellent "basic plan" which you had prepared.

From a logistic standpoint we see the required activities as divisible into tasks, each with separate but interlocking objectives. The tasks have considerable concurrence but do not overlap completely. As a result the overall project duration is as short as possible while remaining orderly in nature. Given the internal pressures to acquire or strike up other productive relationships, we feel that a concurrent approach is greatly preferable to a serial one, particularly since pressures are likely to increase with time. Without further preliminaries, here are the tasks as we see them.

TASK ONE

Primary Objective: Permit GTEDS to realistically evaluate the performance of potential partners and/or acquirees by actual "industry standard" measures in the dynamic context of current and past industry performance.

Recommended Method: INPUT will provide GTEDS with company financial information, operating data and ratios as well as market valuations by four industry groups. These groups are:

1. Processing Services Companies
2. Software Companies
3. Turnkey Companies
4. Professional Service Companies

This data shall be provided as two year quarterly financial performance on a range of measures including revenue, revenue change, profit, profit changes, margins, revenue per employee, return on equity, receivable age and other conventional measures. The data shall cover 100-125 firms appropriately distributed within the four industries. It is important to understand that this data is tracked by INPUT and is not available from standard databases.

For approximately 300 firms in the same four groups INPUT will present an analysis of expense proportions (including marketing, sales, R&D, G&A, etc.) by group and

size to show typical expenditure patterns and expenditure proprtions of least and most profitable firms. Highly detailed data is available.

INPUT will analyze the data for mean performance for each group as well as the top and bottom deciles. With respect to over and underperformance, efforts will be directed to isolating the cause of the non-standard performances and determining what practical lessons can be learned for use in new venture, internal planning and competitive analysis areas.

Interaction with GTEDS acquisition and planning teams is strongly recommended during this task to meet two goals:

1. Improve GTEDS understanding of the dynamics of firms and groups for use in internal planning activity and competitive analysis.

2. Facilitate the development of rational criteria and expectations for acquisitions, joint ventures and the evaluation of candidates, prospects and suspects.

To accomplish these objectives we recommend two - three days of working sessions surrounding the presentation of the company and industry financial analyses. The estimated duration of this task is six to eight weeks calendar time.

TASK TWO

Primary Objective: Bring to the attention of the GTEDS acquisition/joint venture team firms which have merit in light of financial and other criteria as expressed by GTEDS management. These include:

1. Relationship to existing TIBS unit.
2. Appropriate financial performance.
3. Complementary to existing product set.
4. Supplementary to existing sales channels.
5. Targeted towards large Telcos.

While these are the primary criteria, INPUT will not lose sight of other possible relationships or "plays" outside these criteria. The screening activity will cover not only discrete firms but also divisions and subsidiaries of larger firms whose main activity will not necessarily be in an area related to telephony. While INPUT understands that the general requirement is to assemble a "portfolio" of small to medium-sized firms, other possibilities will not be excluded pro forma.

INPUT will begin the screening process with a pass through its database and a review of its files to determine the universe of prospective firms. Based on our knowledge of the data, there will not be fewer than 450 firms and divisions included in the first pass. Based on conformance to stated criteria (and others which may be developed) INPUT will reduce the preliminary list to a second list of approximately 50 firms. In the event that more than 50 firms appear, a secondary list will also be created for the review of GTEDS.

For those 50 firms a brief profile will be created which will enumerate basic company information such as primary products, market and geographic areas served, sales method, growth, reputation, primary expertise and similar information sufficient to GTEDS and INPUT to jointly determine the "goodness of fit" of the unit

and its potential as a venture partner or acquiree. Particular attention will be payed in this phase to the "portfolio" of companies it might be possible to assemble in support of the TIBS business unit. This may be properly considered to be an exercise in a "trial assembly" of an enhanced market position for TIBS.

From the larger list GTEDS and INPUT will develop a "Top Ten" which will be subject to a more rigorous and thorough investigation using all available INPUT resources including contact with the company.

Based on the data developed on the Top Ten, decisions will be made by GTEDS on priority approach, best method of approach, nature of proposed relationship and related factors, all, with an eye toward achieving a level and type of contact appropriate to GTEDS' goals as quickly as possible.

Once again we wish to recommend that this be an "interactive" task in which GTEDS team members work closely with INPUT in the review of the brief profiles and the development of detailed profiles. Estimated calendar duration for this task is eight to nine weeks, overlapping substantially with Task One.

It is also important to note that this activity is not in conflict with existing or proposed GTEDS company contact activities. These may proceed independently but should - at some point - be subject to a similar screening and evaluation regimen.

TASK THREE

Primary Objective: Assist GTEDS in determining the viability of an offering in the Cellular Billing area via standard techniques of market assessment.

Comment: Task Three is somewhat less developed in its specifics due to the recent emergence of this area (from INPUT's perspective) and the lack of specific discussions at meetings which have been held. Prior work in cellular allows us to outline a suggested approach to the evaluation of this opportunity.

Possible Recommended Method: Based on our limited knowledge of GTEDS activities, the key question would appear to be: "Can GTEDS - building on its possible internal base of Mobilenet bill processing - create a viable cellular billing services offering?" A confident answer to this question requires certain data including:

- Current & future market size.

- Market Segmentation by such criteria as:
    a. Wireline/Non-wireline/reseller
    b. Cellular market size (Top 30, Second 30, etc.)
    c. Bill processing mode, current and future

- Capabilities & plans of current competitors

- Customer satisfaction with presently available solutions and customer plans.

- Estimate of available market, now and in the future, perhaps as number of bills per month or similar measure.

- Importance of pricing/processing economics

- GTEDS "true" cost to provide service.

- Influence of price on customers; service/price trade-offs.

This implies two discrete activities. The first may be considered "secondary" research on market size and dynamics as well as basic competitive analysis (there are at least nine service firms in the market). The second task would require interview work with customers of current services. It is not presently possible to specify the cost of this research since it may be that some of the necessary data is already known within GTE and it is further true that the outcome of the first task could materially alter the complexity of the second. Generally speaking a basic market assessment typically involves an expenditure of $10,000 to $15,000 and a detailed customer survey $20,000 to $27,000 for up to 50 customers for very in-depth interviews. Typical duration on a calendar basis is eight to ten weeks, although it may be possible to shorten this interval if necessary. It is also worth noting that several of the competitors in this market might potentially be candidates for joint venture or aquisition. This creates a linkage between all three tasks. INPUT looks forward to developing a full specification and detailed cost quote for this task with appropriate GTEDS staff.

SCHEDULE & FEES

As indicated, the calendar durations for Tasks One and Two are approximately eight weeks for the first and nine weeks for the second. We believe that with appropriate overlap, both tasks could be completed in ten to eleven weeks, possibly sooner dependent upon logistics. The combined fee for the first two tasks is $43,720.00 which is payable in two equal installments of $21,860, one payment at the onset of the engagement and the second at conclusion. Expenses for travel, documents, expedited delivery services and related items (if any) are billed at documentable cost at the conclusion of the engagement. Expenses in excess of 5% of the base fee will not be incurred without the express permission of the GTEDS project supervisor. Fees shall be due and payable within thirty (30) days of INPUT's invoice date.

CONCLUSION

INPUT looks forward to working closely with GTE Data Services on this challenging engagement. For your convenience an authorization block has been provided below. Simply sign appropriately and return a copy of this document to the New Jersey address on the letterhead. Should there be any questions or need for clarification, please contact the undersigned. Thank you for thinking of INPUT.

Sincerely,

D.W. Fostle
Vice President

COMMENCEMENT DATE: March 3, 1986

Accepted by GTE Data Services:

Name: DAVID K. DENMARK

Title: PROCUREMENT DIRECTOR

Date: MAR 04 1986

Signature:

Accepted by INPUT:

Name: D.W. FOSTLE

Title: VICE PRESIDENT

Date: 3/12/86

Signature:

PURCHASE ORDER

GTE Data Services

GTE

SHIPMENT HEREUNDER CONSTITUTES ACCEPTANCE BY VENDOR OF ALL PROVISIONS HEREOF INCLUDING THOSE ON THE REVERSE SIDE.

SEND ALL INVOICES, IN TRIPLICATE, TO:

GTE DATA SERVICES
GENERAL ACCOUNTING
P.O. BOX 1548
TAMPA, FLORIDA 33601

SEND ALL ACKNOWLEDGEMENTS, SHIPPING SCHEDULES, AND CORRESPONDENCE TO:

GTE DATA SERVICES
PURCHASING
P.O. BOX 1548
TAMPA, FLORIDA 33601

PURCHASE ORDER NO. MUST APPEAR ON ALL PACKAGES, INVOICES, AND CORRESPONDENCE.

PURCHASE ORDER NO. 54253

DATE 03-03-86

DATE REQUIRED
03-06-86

TO:
- INPUT
- Attn.: D. W. Fostle
- 959 Route 46 East, #201
- Parsipany, NJ 07054

SHIP TO:
GTE DATA SERVICES INCORPORATED
- 111 East Madison Street
- Tampa, FL 33602
-

ATTN OF: P. Price

DC 164

ORIGINATED BY	DEPARTMENT	GEN. LEDGER ACCT. NO	REQ./CONTROL NO	BUDGET CONT. NO	DATE REQ. RECD	TERMS	F.O.B.
Price, P.	CSDV	32-630 774	18810	266	03-03-86	As due	Destination

QUANTITY RECEIVED	QUANTITY ORDERED	UNIT	DESCRIPTION	ESTIMATED COST UNIT COST	ESTIMATED COST TOTAL
			Study & screening of companies for joint ventues w/GTEDS by INPUT		43,720.00
			Plus expenses NOT TO EXCEED:		2,186.00
					$45,906.00
			In accordance w/Letter Agreement dated February 24, 1986.		

GTE DATA SERVICES
BY W. D. Stallings
PURCHASING REPRESENTATIVE

FOLD

D50219 (Rev. 11-83)
8M

Practice AS-10

VENDOR COPY

INPUT®

Parsippany Place Corporate Center, Suite 201, 959 Route 46 East, Parsippany, NJ 07054 (201) 299-6999

February 24, 1986

Mrs. Patricia H. Price
Manager - New Business Ventures
GTE Data Services
First Florida Tower
P.O. Box 1548
Tampa, FL 33601

YG77

Dear Mrs. Price:

Based on recent meetings with you and others within GTEDS line and senior management, INPUT is pleased to present this proposal for assistance in acquisition and joint venture activities.

While the concepts are similar to the earlier proposal, we are now able to recommend certain specific activities based not only on the meetings but also taking into account the excellent "basic plan" which you had prepared.

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4. Professional Service Companies

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1. Relationship to existing TIBS unit.
2. Appropriate financial performance.
3. Complementary to existing product set.
4. Supplementary to existing sales channels.
5. Targeted towards large Telcos.

While these are the primary criteria, INPUT will not lose sight of other possible relationships or "plays" outside these criteria. The screening activity will cover not only discrete firms but also divisions and subsidiaries of larger firms whose main activity will not necessarily be in an area related to telephony. While INPUT understands that the general requirement is to assemble a "portfolio" of small to medium-sized firms, other possibilities will not be excluded pro forma.

INPUT will begin the screening process with a pass through its database and a review of its files to determine the universe of prospective firms. Based on our knowledge of the data, there will not be fewer than 450 firms and divisions included in the first pass. Based on conformance to stated criteria (and others which may be developed) INPUT will reduce the preliminary list to a second list of approximately 50 firms. In the event that more than 50 firms appear, a secondary list will also be created for the review of GTEDS.

For those 50 firms a brief profile will be created which will enumerate basic company information such as primary products, market and geographic areas served, sales method, growth, reputation, primary expertise and similar information sufficient to GTEDS and INPUT to jointly determine the "goodness of fit" of the unit

and its potential as a venture partner or acquiree. Particular attention will be payed in this phase to the "portfolio" of companies it might be possible to assemble in support of the TIBS business unit. This may be properly considered to be an exercise in a "trial assembly" of an enhanced market position for TIBS.

From the larger list GTEDS and INPUT will develop a "Top Ten" which will be subject to a more rigorous and thorough investigation using all available INPUT resources including contact with the company.

Based on the data developed on the Top Ten, decisions will be made by GTEDS on priority approach, best method of approach, nature of proposed relationship and related factors, all, with an eye toward achieving a level and type of contact appropriate to GTEDS goals as quickly as possible.

Once again we wish to recommend that this be an "interactive" task in which GTEDS team members work closely with INPUT in the review of the brief profiles and the development of detailed profiles. Estimated calendar duration for this task is eight to nine weeks, overlapping substantially with Task One.

It is also important to note that this activity is not in conflict with existing or proposed GTEDS company contact activities. These may proceed independently but should - at some point - be subject to a similar screening and evaluation regimen.

TASK THREE

Primary Objective: Assist GTEDS in determining the viability of an offering in the Cellular Billing area via standard techniques of market assessment.

Comment: Task Three is somewhat less developed in its specifics due to the recent emergence of this area (from INPUT's perspective) and the lack of specific discussions at meetings which have been held. Prior work in cellular allows us to outline a suggested approach to the evaluation of this opportunity.

Possible Recommended Method: Based on our limited knowledge of GTEDS activities, the key question would appear to be: "Can GTEDS - building on its possible internal base of Mobilnet bill processing - create a viable cellular billing services offering?" A confident answer to this question requires certain data including:

- Current & future market size.

- Market Segmentation by such criteria as:
  a. Wireline/Non-wireline/reseller
  b. Cellular market size (Top 30, Second 30, etc.)
  c. Bill processing mode, current and future

- Capabilities & plans of current competitors

- Customer satisfaction with presently available solutions and customer plans.

- Estimate of available market, now and in the future, perhaps as number of bills per month or similar measure.

- Importance of pricing/processing economics

- GTEDS "true" cost to provide service.

- Influence of price on customers; service/price trade-offs.

This implies two discrete activities. The first may be considered "secondary" research on market size and dynamics as well as basic competitive analysis (there are at least nine service firms in the market). The second task would require interview work with customers of current services. It is not presently possible to specify the cost of this research since it may be that some of the necessary data is already known within GTE and it is further true that the outcome of the first task could materially alter the complexity of the second. Generally speaking a basic market assessment typically involves an expenditure of $10,000 to $15,000 and a detailed customer survey $20,000 to $27,000 for up to 50 customers for very in-depth interviews. Typical duration on a calendar basis is eight to ten weeks, although it may be possible to shorten this interval if necessary. It is also worth noting that several of the competitors in this market might potentially be candidates for joint venture or aquisition. This creates a linkage between all three tasks. INPUT looks forward to developing a full specification and detailed cost quote for this task with appropriate GTEDS staff.

SCHEDULE & FEES

As indicated, the calendar durations for Tasks One and Two are approximately eight weeks for the first and nine weeks for the second. We believe that with appropriate overlap, both tasks could be completed in ten to eleven weeks, possibly sooner dependent upon logistics. The combined fee for the first two tasks is $43,720.00 which is payable in two equal installments of $21,860, one payment at the onset of the engagement and the second at conclusion. Expenses for travel, documents, expedited delivery services and related items (if any) are billed at documentable cost at the conclusion of the engagement. Expenses in excess of 5% of the base fee will not be incurred without the express permission of the GTEDS project supervisor. Fees shall be due and payable within thirty (30) days of INPUT's invoice date.

CONCLUSION

INPUT looks forward to working closely with GTE Data Services on this challenging engagement. For your convenience an authorization block has been provided below. Simply sign appropriately and return a copy of this document to the New Jersey address on the letterhead. Should there be any questions or need for clarification, please contact the undersigned. Thank you for thinking of INPUT.

Sincerely,

D.W. Fostle
Vice President

COMMENCEMENT DATE: March 3, 1986

Accepted by GTE Data Services:

Name: DAVID K. DENMARK

Title: PROCUREMENT DIRECTOR

Date: MAR 0 4 1986

Signature:

Accepted by INPUT:

Name:

Title: VICE PRESIDENT

Date: 3/12/86

Signature: D.W. FOSTLE

INPUT®

Parsippany Place Corporate Center, Suite 201, 959 Route 46 East, Parsippany, NJ 07054 (201) 299-6999

Y GT8

March 12, 1986

Ms. Elizabeth A. Stalvey
Contract Administrator
GTE Data Services Incorporated
First Florida Tower
P.O. Box 1548
Tampa, FL 33601

Dear Ms. Stalvey:

Thank you for your prompt attention to these contractual matters. An executed copy of the agreement is enclosed.

Sincerely,

D.W. Fostle
Vice President

DWF/raf
enclosure

File
YGT

"WORK MADE FOR HIRE" AND
CONFIDENTIALITY AGREEMENT

This Agreement dated March 20, 1986, is made between GTE Data Services Incorporated (GTEDS) and Dan Fostel (Consultant), temporarily assigned to GTEDS pursuant to letter agreement between INPUT and GTEDS, dated February 24, 1986.

The parties hereto expressly agree that the work to be performed by Consultant during this assignment (including any extension thereof) is specifically ordered or commissioned for use as a contribution to a collective work, and shall be considered a work made for hire as defined by the Copyright Act, 17 U.S.C. §101.

The parties recognize that in order to perform this work, Consultant will need access to certain information which is confidential and proprietary to GTEDS and its suppliers and customers, and which GTEDS is unwilling (or in some cases not legally authorized) to disclose without adequate assurances that such information will be properly used and protected. Accordingly, Consultant voluntarily assumes the following obligations:

In consideration of the disclosure of confidential and properietary information, Consultant hereby agrees as follows:

1. "Confidential and proprietary information" shall mean information in oral or written form relating to the business or products of GTEDS, its suppliers and customers, including present status, plans and capabilities as well as the technology, architecture, data bases, and software associated therewith.

2. Consultant shall maintain all confidential and proprietary information disclosed or received in confidence, and shall use it only for the purpose of performing the work called for pursuant to this assignment; shall not disclose confidential and proprietary information to third parties; shall not copy confidential and proprietary information, in whole or in part, without the prior written consent of GTEDS (except when such copying is done as a function of Consultant's assignment with GTEDS); and shall return the original and all copies of confidential and proprietary information to GTEDS promptly following expiration of Consultant's assignment with GTEDS or upon the request of GTEDS, whichever shall first occur.

3. Consultant shall have no obligation to keep confidential information which:

   a. is already in Consultant's possession prior to disclosure to by GTEDS;

   b. is, or becomes, public knowledge other than by breach of this agreement;

   c. is disclosed to Consultant by a third party rightfully in possession of same; or

d. is required to be disclosed by valid order of a court or other governmental body, or otherwise required by law.

4. Consultant's obligations hereunder with respect to handling, maintaining in confidence, and limited use of confidential and proprietary information disclosed during Consultant's assignment with GTEDS shall survive the expiration of such assignment. Consultant's obligations hereunder shall terminate five years from the date hereof, and Consultant shall thereafter have no obligation with respect thereto.

Consultant further agrees to observe all working rules applicable to GTEDS employees doing similar work.

Signed in duplicate as of the date first set forth above.

GTE Data Services Incorporated	Consultant
By: ARSlade	D. W. Mills
Title: Arthur R. Slade, Secretary	
Date: 3/20/86	Date: 3/31/86

INPUT

ORDER/INVOICE/FULFILLMENT

ORIGINATOR (SIGNATURE) [illegible] PREPARED BY: DWF DATE: 2/28/86

ACTIVITY

- [x] NEW ORDER
- [ ] CONTINUATION
- [ ] CHANGE
- [ ] CANCEL
- [ ] SPECIAL:

- [ ] FULFILLMENT ONLY
- [ ] SINGLE INVOICING
- [x] MULTI-INVOICING: NO. INVOICES 2
- [ ] PENDING:

COMMISSION TO:	SOLD BY:	APPROVED
%	%	
%	%	INITIAL
%	%	
%	%	DATE

PRODUCT

- [ ] SUBSCRIPTION
- [x] CUSTOM
- [ ] MULTICLIENT
- [ ] REPORTS
- [ ] COPIES
- [ ] CONSULT./PRESENT.
- [ ] TAPES/MATERIALS
- [ ] REIMBURSED COSTS

US/UK	PROJ. ID/YEAR	TITLE OR DESCRIPTION	AMOUNT
	YGT8	ACQUISITION PLAN	$3,720

CLIENT AUTH.

P.O. # _____ INPUT CONTRACT [x] LETTER [ ] VERBAL [ ]

ATTACH ALL AUTHORIZING DOCUMENTS TO WHITE (CONTRACT) COPY. TO COME

ORIGINATOR / INVOICE

SHIP TO:*
NAME PATRICIA H. PRICE
TITLE MGR. NEW VENTURES
COMPANY GTE DATA SERVICES
ADDRESS FIRST FLORIDA TOWER
PO BOX 1548
TAMPA, FL 33601
PHONE (813) 224-3026

INVOICE TO: (IF DIFFERENT)
NAME
TITLE NOTE THIS PURCHASE
COMPANY CONTRACTS OIF, SOW, SKED
ADDRESS & PROTOCOL

PHONE ( )

* [ ] Check here if more than one shipping address and attach names and addresses to green (fulfillment) copy.

* [ ] Check here for address change to mail list.

INVOICE TO READ: ~~(FOR OTHER THAN STANDARD WORDING)~~

BILL FIRST HALF IMMEDIATELY = $21,860

SPECIAL INSTRUCTIONS FOR HANDLING, BILLING, STAGGERED OR DELAYED PAYMENTS, ETC.

EXPENSES MUST BE REVIEWED BY DWF

O.I.F. ONLY

INV. COMP.	BY:	DATE:	CLIENT #:	ORDER #:	INV. #:	MULTI-INVOICING ____ OF ____

ORIGINATOR/SHIPPING — FULFILLMENT

ITEM DESCRIPTION OR TITLE	NO.	BY	DATE	ITEM DESCRIPTION OR TITLE	NO.	BY	DATE

FULFILLMENT TO BE COMPLETED IN: [ ] PALO ALTO [ ] LONDON [ ] OTHER _____

• WHITE - CONTRACT • GREEN - FULFILLMENT • YELLOW - INVOICE • PINK - ORIGINATOR
• GOLDENROD - REGIONAL SALES MANAGER

R 1/81

INPUT N.J.

ENCLOSED: PROJECT

- OIF _____
- W.S. _____
- SKED _____
- EXPENSES _____
- INVOICES _____
- CONTRACT - YGT8 (INCLUDES BILLING INSTRUCTIONS)

DATE SENT: 8/12/86 BY: DLF

DATE RECEIVED: _____ BY: _____

EXCEPTIONS: Note below or check NONE _____

_____

_____

_____

SENT TO PAT C.

INPUT N.J.

ENCLOSED: PROJECT

- OIF YG78 ✓
- W.S. YG78 ✓
- SKED YG78 ✓
- EXPENSES
- INVOICES
- PROPOSAL YG78 ✓ (COPY - UNSIGNED)

DATE SENT: 2/28/6 BY: NAF

DATE RECEIVED: 3/4/86 BY: Sheila Collins - THANK-YOU

EXCEPTIONS: Note below or check NONE

INPUT N.J.

ENCLOSED: PROJECT

- OIF YGT8 ✓
- W.S. YGT8 ✓
- SKED YGT8 ✓
- EXPENSES
- INVOICES
- PROPOSAL YGT8 (1 Copy - UNSIGNED)

DATE SENT: 2/28/6 BY: [illegible]

DATE RECEIVED: 3/4/86 BY: [illegible]

EXCEPTIONS: Note below or check NONE

3/12/86 - PETER: HERE IS THE COPY OF THE TURN-AROUND DOCUMENT WHICH SHOWS THAT THE PROPOSAL YOU WERE SEARCHING OUT WAS IN CALIFORNIA ON OR BEFORE 3/4/86, A WEEK BEFORE YOUR VMX. NOTE THAT THE PROPOSAL WAS ADTED 2/24 AND WAS SENT TO PATC, ONLY FOUR DAYS LATER AND THE SAME WEEK.

[illegible]

TITLE ACQUISITION PLAN

CLIENT GTE DATA SERVICES

CONTRACT: ATTACHED ____ TO FOLLOW ✓ LETTER ____ VERBAL ____

PROJECT LEADER [illegible] CODE 7678

DATE STARTED 2/28/86 PLANNED COMPLETION DATE 4/30/86

LEVEL OF EFFORT (Professional Man Days) 35

TOTAL CONTRACT VALUE: $ 43,770

REVENUE DISTRIBUTION (% or $) INPUT US 100 INPUT LTD ____

REIMBURSABLE EXPENSES: NO ____

YES ✓

EXP. BUDGET ____ TO COVER: TRAV: ✓
TEL: ____
RPT. PREP.: ____
OTHER: ____

BILLING SCHEDULE DESCRIPTION 50/50 SPLIT

PROJECT DESCRIPTION REVIEW ACQUISITION POSSIBILITIES, DEVELOP FINANCIAL STANDARDS & OTHER CRITERIA FOR ACQUISITIONS

INDICATE TYPE OF CUSTOM WORK: REPORT ____ PRESENTATION ____

THANK YOU PACKAGE: YES ____ NO ✓

1985 QUARTERLY SCHEDULING PLAN Q1

PROJECT: 7678

PROJECT LEADER: DWF

DATE: 2/28/84

ACTIVITY / PROJECT	NAME	MAN DAYS	EFFI-CIENCY	ESMD	CORP WEEK END	1 ~~1/4~~	2 ~~1/11~~	3 ~~1/18~~	4 ~~1/25~~	5 ~~2/1~~	6 ~~2/8~~	7 ~~2/15~~	8 2/22	9 ~~3/1~~	10 3/8	11 3/15	12 3/22	13 3/29
CORPORATE/WEEK ENDING						~~JANUARY~~ MAR				~~FEBRUARY~~ APRIL				MARCH				
PROJECT AUTHORIZATION/ SPECIFICATION	DWF			2		2												
Q DESIGN				X														
Q APPROVAL/ REVIEW MEETING				X														
INTERVIEWS ON SITE ( ) NO.				X														
INTERVIEWS PHONE ( ) NO.				X														
DATATAB AND ANALYSIS	DWF R.A.			20														
WRITING	DWF			10														
ABSTRACT																		
QC																		
REPORT PROD. AND SHIPPING																		
CONSULT & PRESENTATION	DWF			3														
"THANK YOU" MAILED	X																	
PLAN				35														
ACTUAL																		
CUM P/A																		

R12/83

INPUT

ANALYSIS OF COMPUTER SERVICES INDUSTRY FINANCIAL PARAMETERS

PRESENTATION FOR

GTE DATA SERVICES

MAY 9, 1986

INPUT

PURPOSE

- o THIS DATA HAS BEEN DEVELOPED TO ASSIST GTEDS IN ITS AQUISITION ACTIVITIES. THERE ARE THREE BASIC PURPOSES:
  - SET FORTH AVERAGE FINANCIAL MEASURES TO PERMIT EVALUATION OF CANDIDATE FIRMS AGAINST THOSE AVERAGES.
  - SET FORTH MARKET VALUATION MEASURES TO ASSIST IN DETERMINING THE PRICE WHICH COULD REASONABLY BE PAID.
  - DISTINGUISH THE MATERIAL DIFFERENCES IN FINANCIAL MEASURES AND VALUATIONS AS THEY EXIST BETWEEN INDUSTRY SECTORS.
- o PROVIDE GTEDS WITH A SYSTEMATIC QUANTITATIVE ENTRY TO THE ACQUISITION PROCESS USEFUL GAUGING CANDIDATES WHICH APPEAR EITHER SYSTEMATICALLY OR SERENDIPITOUSLY.

INPUT

INTRODUCTION

- FOR THIS ANALYSIS DATA WAS GATHERED ON 105 PUBLICLY HELD INFORMATION SERVICES INDUSTRY FIRMS.

- APPROXIMATELY 6,400 DATA ITEMS FOR THE YEAR 1983 & 1984 WERE GATHERED OR COMPUTED. SOURCE EMPLOYED WERE THE AUDITED FINANCIALS OF THE 105 PUBLICLY REPORTING FIRMS AS PRESENTED IN ANNUAL REPORTS OF THE FIRMS, SEC FILINGS AND ELECTRONIC DB'S. INPUT FILES, THE SECURITIES EXCHANGE COMMISSION AND DISCLOSURE, INC. WERE THE PRINCIPAL REPOSITORIES SEARCHED FOR FINANCIAL DATA.

- HISTORICAL STOCK PRICE INFORMATION FOR MANY SMALL OTC COMPANIES IS NOT MAINTAINED BY ANY CENTRAL SOURCE. ACCORDINGLY, BACK ISSUES OF BARRON'S FINANCIAL WEEKLY WERE CONSULTED. FOR NYSE & ASE COMPANIES THE PRICE USED IS THE CLOSE OF THE TRADING DATE NEAREST THE LAST DAY OF THE YEAR (OR QUARTER). FOR COMPANIES NOT MEETING BARRON'S LISTING REQUIREMENTS, TELEPHONE CALLS WERE PLACED TO A FINANCIAL OFFICER OF THE COMPANY TO DETERMINE RELEVANT STOCK PRICES.

INTRODUCTION (continued)

- COMPANIES WITH FISCAL YEAR-ENDS OTHER THAN 12/31 WERE ALIGNED FORWARD OR BACKWARD BASED ON MONTH NEAREST 12/31. ACCORDINGLY A FIRM WITH A YEAR END IN FEBRUARY 1984 WAS "PUSHED BACK" TO DECEMBER 1983. THE DISTORTIONS CAUSED BY THIS ARE NOT BELIEVED MATERIAL IN THE AGGREGATE.

- COMPANIES IN THIS GROUP ARE GENERALLY COMPARABLE TO THOSE IN INPUT'S VENDOR WATCH PUBLICATION. DIFFERENCES OCCUR HOWEVER DUE TO THE WAY "VEN-WATCH" DATA IS COMPILED ON A "ROLLING QUARTER," AS-REPORTED BASIS. RE-STATEMENTS FOR ACQUISITIONS OR ACCOUNTING REASONS WILL NOT NECESSARILY BE REFLECTED IN VEN-WATCH BUT ARE SEEN IN THIS DATA. ANNUAL DATA WAS CHOSEN DUE TO THE ACCOUNTING IMPRACTICALITY OF ACCURATELY SYNTHESIZING BALANCE SHEET AND P&L ITEMS FROM SOMETIMES UNAUDITED QUARTERLY DATA FOR 105 COMPANIES.

INTRODUCTION (continued)

- FIRMS ARE CLASSIFIED AS ONE OF FOUR TYPES BASED ON THEIR PRINCIPAL LINE OF BUSINESS, AS A RESULT, THERE IS SOME DISTORTION IN GROUP AVERAGES OF AN INDETERMINABLE AMOUNT, PARTICULARLY AMONG VERY LARGE FIRMS SUCH AS COMPUTER SCIENCES (CSC) WHICH ENGAGES IN BOTH PROFESSIONAL SERVICES AND PROCESSING. SINCE COMPANIES PUBLISH ONLY CONSOLIDATED P&L'S AND BALANCE SHEETS, THIS DISPERSION IS UNAVOIDABLE.

- AS PRESENTED, RATIOS ARE WEIGHTED AVERAGES. FOR EXAMPLE MEAN NET MARGIN IS COMPUTED FROM THE SUMS OF REVENUE AND NET INCOME IN A SECTOR. IT IS NOT THE ARITHMETIC MEAN OF THE INDIVIDUAL COMPANY NET MARGINS. THIS REMOVES THE DISTORTION CAUSED BY ABERRATIONS IN SIZE, MARKET VALUATIONS, MARGINS AND RATIOS CAUSED BY SMALL COMPANIES IN "UNUSUAL" CIRCUMSTANCES.

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

PROCESSING SERVICES

FINANCIAL

	1983	1984	%
REVENUE	$ 83,569	$ 100,165	19.9
NET INCOME	7,869	8,810	12.0
NET MARGIN	9.4%	8.8%	-6.6
EQUITY (BOOK)	51,623	59,490	18.1
R.O.E.	15.2%	14.8%	-2.2
ASSETS	102,556	120,618	17.6
R.O.A.	7.7%	7.3%	-4.8
SALES/ASSETS	0.81	0.83	1.9
R.P.E.	76.099	75.910	-0.2
WORKING CAPITAL	15,433	23,454	52.0
WORKING CAPITAL/REV.	.185	.234	26.8
BOOK/SHARE ($)	5.04	5.35	6.2

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

PROCESSING SERVICES

VALUATION

	1983	1984	%
MARKET/BOOK	4.14	2.74	-33.8
P/E	27.2	18.5	-32.0
MARKET VALUE	213,846	163,073	-23.7
MARKET/SALES ($)	2.56	1.63	-36.3
S/P 500 PE	11.8	10.1	-14.4
P/E MULT	2.3	1.8	-22.7
SP 500 INDEX	164.9	167.2	+1.4

INPUT

PROCESSING COMMENTS

- YEAR TO YEAR, PROCESSING COMPANIES TURNED IN A STRONG REVENUE GROWTH PERFORMANCE AVERAGING AN ALMOST 20% (19.9) INCREASE.
- EARNINGS LAGGED RESULTING IN AN EROSION IN MARGINS OF A MODERATE NATURE. MARGINS DROPPED FROM 9.4% to 8.8%.
- DESPITE THE MARGIN EROSIONS, THE COMPANIES WERE ABLE TO CONTRIBUTE STRONGLY TO EQUITY WHICH INCREASED 18.1%.
- RETURNS ON EQUITY WERE ESSENTIALLY STABLE AT 15.2 - 14.8% IN 1983-1984 RESPECTIVELY
- ASSETS LIKEWISE INCREASED A SUBSTANTIAL 17.6% WITH SOME DECREMENT IN THE R.O.A. TO 7.3%.
- REVENUE GENERATION POWER OF $1.00 IN ASSETS INCREMENTED MODESTLY TO $0.83 in 1984.
- EMPLOYEE PRODUCTIVITY WAS ESSENTIALLY FLAT AT ABOUT 76K PER PERSON IN BOTH YEARS.

INPUT

PROCESSING (continued)

- LIQUIDITY AS MEASURED BY WORKING CAPITAL IMPROVED MARKEDLY, LEAPING 52%. THE RATIO OF WORKING CAPITAL TO REVENUE CLIMBED VERY SUBSTANTIALLY, ALMOST 27%.

- WHILE EQUITY INCREASED MARKEDLY, COMPANIES ISSUED ADDITIONAL SHARES RESULTING IN A MODEST INCREASE IN BOOK VALUE PER SHARE TO $5.35 FROM $5.04. (EQUIVALENT GTE VALUE WAS $33.89 in 1983).

- WHILE COMPANY FINANCIAL PERFORMANCE - OTHER THAN MODERATE MARGIN EROSION - WAS QUITE GOOD, MARKET VALUATIONS AND RELATED PARAMETERS FELL PRECIPITOUSLY. THE AVERAGE MARKET VALUE OF A PROCESSING SERVICES FIRM DROPPED 23.7% YEAR-END TO YEAR-END.

- SINCE EARNINGS INCREASED, P/E RATIOS DECLINED A SHARP 32% WHILE MARKET TO BOOK DECLINED 33.8% TO 2.74 FROM 4.14.

- THESE EFFECTS WERE NOT DUE TO GENERAL MARKET CONDITIONS. P/E'S OF THE S/P 500 DECLINED 14.4% INDICATING THE P/E DROP IN PROCESSING SERVICES WAS MUCH MORE SEVERE AT ALMOST 24%.

INPUT

PROCESSING (continued)

- DURING THIS TIME, THE S/P INDEX WAS APPROXIMATELY FLAT INDICATING STABLE VALUATIONS FOR THE BROAD MARKET INDEX.

- BETA ANALYSES HAVE SHOWN LARGE DOWN-MARKET BETAS FOR STOCKS IN THIS INDUSTRY. PRICE ACTION OF THIS NATURE SHOULD BE TAKEN INTO ACCOUNT IN GTED'S ACQUISITION STRATEGY. WHILE NOT AN APPEALING PHENOMENON TO ORDINARY EQUITY INVESTORS, THE "DOWN-DRAFT" BEHAVIOR OF VALUATIONS COULD SIGNIFICANTLY BENEFIT GTEDS IN TERMS OF PRICE PAID FOR SPECIFIC ASSETS. AS WE SHALL SEE, ALL SECTORS EXHIBIT THIS PHENOMENON TO SOME EXTENT.

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

SOFTWARE

FINANCIAL

	1983	1984	%
REVENUE	$ 41,883	$ 56,885	35.8
NET INCOME	3,600	3,495	-2.9
NET MARGIN	8.6	6.1	-28.5
EQUITY(BOOK)	33,046	37,655	13.9
R.O.E.	10.9	9.3	-14.8%
ASSETS	49,589	62,863	26.8
R.O.A.	7.3%	5.6%	-23.4
SALES/ASSETS	0.84	0.90	7.1
R.P.E.	91.764	101.566	10.7
WORKING CAPITAL	22,722	23,715	4.4
WORKING CAPITAL/REV.	.548	.417	-23.9
BOOK/SHARE	4.06	4.53	11.6

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

SOFTWARE

VALUATION

	1983	1984	%
MARKET/BOOK	4.23	3.48	-17.7
P/E	44.9	33.6	-25.2
MARKET VALUE	161,826	117,374	-27.5
MARKET/SALES	3.86	2.06	-46.6
S/P 500 PE	11.8	10.1	-14.4
P/E MULT	3.8	3.3	-13.2
SP 500 INDEX	164.9	167.2	1.4

INPUT

SOFTWARE COMMENTS

- SOFTWARE COMPANIES AS A GROUP TURNED IN A SPECTACULAR 35.8% INCREASE IN REVENUE IN '84 OVER '83. THIS AGGREGATE GROWTH WAS PROPELLED BY EXPLOSIVE DEMAND FOR MICRO-SOFTWARE WHICH HAS SINCE EBBED.

- EARNINGS PERFORMANCE DID NOT TRACK REVENUE HOWEVER AND EARNINGS DECLINED MODESTLY IN THE FACE OF MASSIVE REVENUE INCREASES, 2.9% ON AVERAGE.

- MARGINS SUFFERED SUBSTANTIALLY, FALLING FROM 8.6% to 6.1%, A DECLINE OF 28.5%.

- AS A RESULT, CONTRIBUTIONS TO EQUITY GREW ONLY 13.9% WHILE R.O.E. FELL ALMOST 15% TO 9.3%.

- WHILE ASSETS INCREASED A SIGNIFICANT 26.8%, RETURN ON ASSETS PLUMMETED TO ONLY 5.6% FROM THE PREVIOUS 7.3%.

- SINCE SALES GREW FASTER THAN ASSETS, A 7.1% INCREASE IN THE S/A RATIO OCCURED WITH PUBLIC SOFTWARE COMPANIES GENERATING $.90 IN SALES FOR EVER DOLLAR IN ASSETS IN 1984.

INPUT

SOFTWARE (continued)

- INDICATIVE OF THE EARNINGS "PINCH," WORKING CAPITAL INCREASED ONLY 4.4% WITH A CONCOMITANT DECAY OF THE W.C. RATIO TO .417.

- BOOK VALUES PER SHARE MADE MODEST GAINS OF 11.6% TO $4.53 PER SHARE.

- MARKET TO BOOK FELL ALMOST 18% TO 3.48 WHILE P/E'S PLUMMETED TO AN AVERAGE 33.6 TIMES EARNINGS FROM A VERY "RICH" 44.9.

- TOTAL MARKET VALUE OF THE FIRMS FELL 27.5%, A DROP NOT DISSIMILAR TO THE 23.7% SEEN IN PROCESSING. GIVEN EARNINGS PERFORMANCE OF THE TWO GROUPS, A GREATER DROP IN SOFTWARE SHOULD HAVE OCCURRED. WE MAY SPECULATE THAT EXPECTATIONS OF FUTURE EARNINGS GROWTH WERE HIGHER IN SOFTWARE THAN PROCESSING.

- IN 1984 IT TOOK $2.06 IN MARKET VALUE TO BUY $1.00 IN SALES, A PRECIPITOUS DROP OF 46.6% FROM $3.86 IN 1983.

- COMMENTS ON VALUATION VERSUS S/P 500 APPLY HERE ALSO.

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

PROFESSIONAL SERVICES

FINANCIAL

	1983	1984	%
REVENUE	$ 98,831	$ 113,016	14.4
NET INCOME	3,161	3,905	23.6
NET MARGIN	3.2%	3.5%	8.0
EQUITY (BOOK)	34,488	40,050	16.2
R.O.E.	11.9%	12.8%	7.4
ASSETS	57,286	66,052	15.3
R.O.A.	5.5%	5.9%	7.2
SALES/ASSETS ($)	1.73	1.71	-0.8
R.P.E.	63.846	68.410	7.1
WORKING CAPITAL	15,140	17,296	14.2
WORKING CAPITAL/REV.	.152	.153	0.7
BOOK/SHARE ($)	5.71	5.54	-3.0

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

PROFESSIONAL SERVICES

VALUATION

	1983	1984	%
MARKET/BOOK	3.22	1.85	-42.5
P/E	27.1	14.5	-46.5
MARKET VALUE	85,537	56,559	-33.9
MARKET/SALES ($)	0.87	0.50	-42.5
S/P 500 P/E	11.8	10.1	-14.4
P/E MULT	2.3	1.4	-39.1
SP 500 INDEX	164.9	167.2	+1.4

INPUT

PROFESSIONAL SERVICES COMMENTS

- PROFESSIONAL SERVICES FIRMS EXPERIENCED A MODERATE 14.4% REVENUE INCREASE WITH A MUCH STRONGER EARNINGS GROWTH OF 23.6%.
- MARGINS, WHILE INCREASING, REMAINED LOW AT 3.5% NET ON SALES.
- RETURN ON EQUITY IMPROVED TO 12.8% BUT REMAINS MATERIALLY LOWER THAN ALL SECTORS SAVE SOFTWARE.
- ASSETS INCREASED 15.3%, THE LOWEST INCREASE AMONG THE FOUR SECTORS.
- RETURN ON ASSETS WAS 5.9%, A MODEST 7.2% INCREASE OVER 1983. HISTORICALLY, THE LOWEST R.O.A.'S ARE FOUND IN THIS SECTOR.
- THE REVENUE GENERATING POWER OF $1.00 IN ASSETS FELL VERY SLIGHTLY (-0.8%) TO $1.71 WHILE EMPLOYEE PRODUCTIVITY INCREASED A STRONG 7.1% TO $68.4K.

INPUT

PROFESSIONAL (continued)

- WORKING CAPITAL INCREASED ON PAR WITH REVENUES WITH NO CHANGE IN THE W.C. RATIO (AS WOULD BE EXPECTED).
- BOOK VALUE PER SHARE FELL IN THIS GROUP DUE TO GROWTH IN SHARES OUTSTANDING (ABOUT 3%) WHILE TOTAL BOOK VALUE GREW 16%.
- P/E'S COLLAPSED, FALLING FROM 27.1 TO 14.5 IN ONE YEAR ON A 23.6% INCREASE IN EARNINGS.
- TOTAL MARKET VALUE WAS SLICED BY 33.9% WITH A 42.5% FALL IN MARKET/BOOK RATIO FROM 3.22 TO 1.85 ALSO OCCURING.
- THE MULTIPLIER TO THE S&P ALSO SLIPPED 39.1% FROM 2.3X TO ONLY 1.4X.
- THIS MASSIVE DEVALUATION HAD CSC SELLING SLIGHTLY BELOW ITS BOOK VALUE AT YEAR-END DESPITE STRONG EARNINGS INCREASES.
- OF THE FOUR SECTORS EXAMINED THIS ONE SEEMS THE MOST SENSITIVE TO DEVALUATION FOR "NON-FUNDAMENTAL" REASONS.

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

TURNKEY SYSTEMS

FINANCIAL

	1983	1984	%
REVENUE	$ 85,383	$ 111,694	30.8
NET INCOME	7,189.99	9,140	27.1
NET MARGIN	8.4%	8.2%	-2.8
EQUITY (BOOK)	48,695	62,407	28.2
R.O.E.	14.8%	14.6%	-0.8
ASSETS	81,495	109,157	33.2
R.O.A.	8.8%	8.4%	-4.5
SALES/ASSETS	1.04	1.02	-1.8
R.P.E.	94.821	101.499	7.7
WORKING CAPITAL	29,144	41,891	43.7
WORKING CAPITAL/REV.	.341	.375	9.9
BOOK/SHARE	4.54	5.16	13.7

INPUT

PARAMETERS OF MEAN PUBLIC SERVICES COMPANIES

TURNKEY SYSTEMS

VALUATION

	1983	1984	%
MARKET/BOOK	4.70	3.74	-20.43
P/E	31.8	25.5	-19.8
MARKET VALUE	231,590	223,520	-3.5
MARKET/SALES	2.68	2.09	-22.4
S/P 500 PE	11.8	10.1	-14.4
P/E MULT	2.7	2.5	-7.4
S/P 500 INDEX	164.9	167.2	1.4

INPUT

TURNKEY SYSTEMS COMMENTS

- PROPELLED BY STRONG DEMAND FOR CAD/CAM SYSTEMS WHICH SUBSEQUENTLY SOFTENED, TURNKEY REVENUES GREW 30.8% IN 1984.
- NET INCOME LAGGED ONLY SLIGHTLY, GROWING BY 27.1% WHILE MARGINS "HELD" AT 8.2%.
- EQUITY ALSO INCREASED STRONGLY AS A CONSEQUENCE, GROWING 28%. RETURN ON EQUITY WAS ALMOST STABLE AT 14.6% IN 1984 VERSUS 14.8% IN 1983.
- HEAVY INVESTMENT OCCURRED IN THIS SECTOR WITH A 33.2% INCREASE IN AVERAGE ASSETS. INVESTMENT EXCEEDED BOTH REVENUE AND EARNINGS GAINS.
- AS A RESULT THE R.O.A. SLIPPED SLIGHTLY TO 8.4%, AS DID THE S.A. RATIO TO $1.02 FROM $1.04.

INPUT

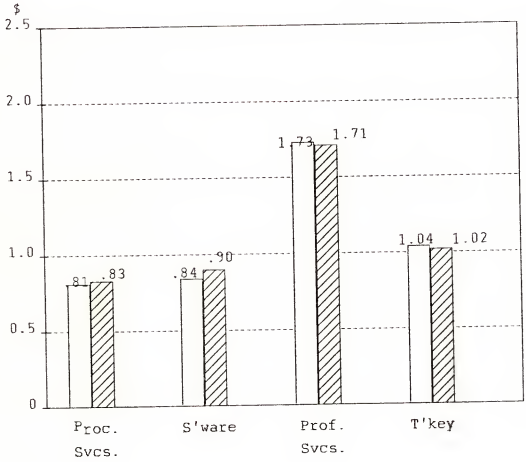
TURNKEY (continued)

- REVENUE PER EMPLOYEE INCREASED A STRONG 7.7.% WHICH MAY ONLY INDICATE AN INABILITY TO RECRUIT AS RAPIDLY AS SALES DEMAND WAS RISING.
- THERE WAS ALSO AN IMPROVEMENT IN LIQUIDITY WITH THE W.C. RATIO INCREASING 9.9%.
- BOOK VALUE PER SHARE INCREASE DID NOT KEEP PACE WITH BOOK VALUE DUE TO INCREASED SHARES. GROWTH WAS 13.7%.
- THIS SECTOR WAS LEAST IMPACTED BY FALLING VALUATIONS DURING THE STUDY TIME FRAME.
- P/E'S DECLINED A "MODERATE" 19.8% WITH THE S&P MULTIPLIER SLIPPING ONLY 7.4% FROM 2.7 to 2.5.
- TOTAL MARKET VALUE DECLINED ONLY MODESTLY, ABOUT 3.5% WHILE A DOLLAR'S WORTH OF SALES WHICH COST 2.68 IN THE MARKET IN 1983 COULD BE HAD FOR 2.09 IN 1984, A REDUCTION OF 22.1%.

INPUT

$ SALES PER $ ASSETS

(Four Sectors, 1983-1984)

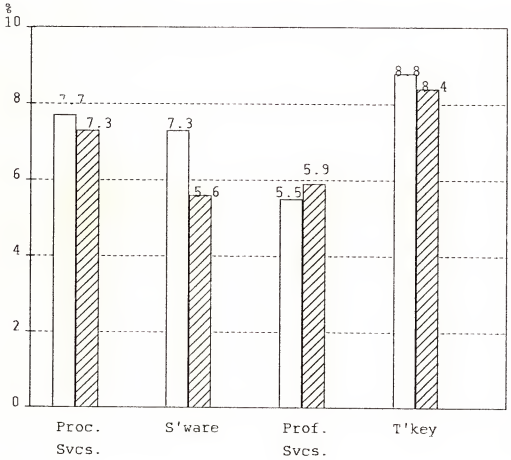


Note: Data are for public companies on a fiscal year basis.

INPUT

AVG. RETURN ON TOTAL ASSETS

(Four Sectors, 1983-1984)

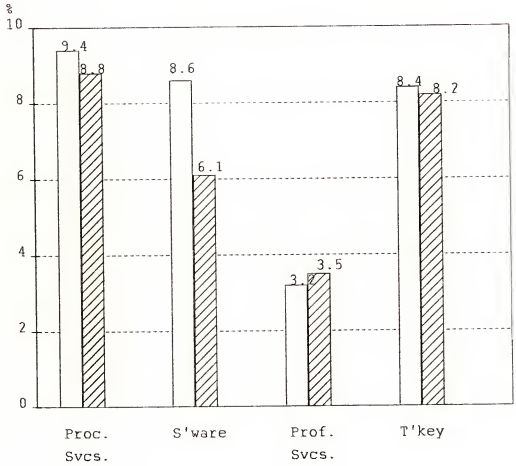


Note: Data are for public companies on a fiscal year basis.

INPUT

AVERAGE NET MARGINS

(Four Sectors, 1983-1984)

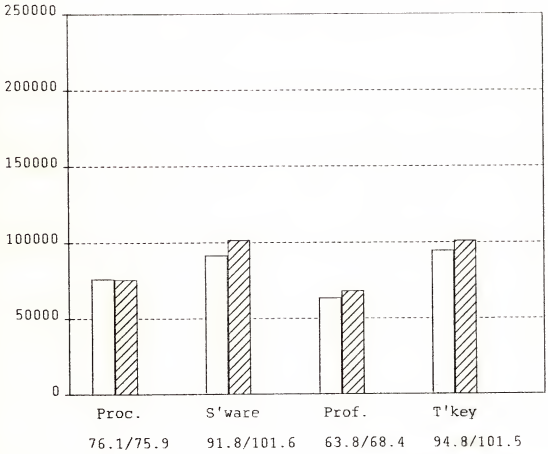


Note: Data are for public companies on a fiscal year basis.

INPUT

AVERAGE REVENUE PER EMPLOYEE

(Four Sectors,1983-1984)

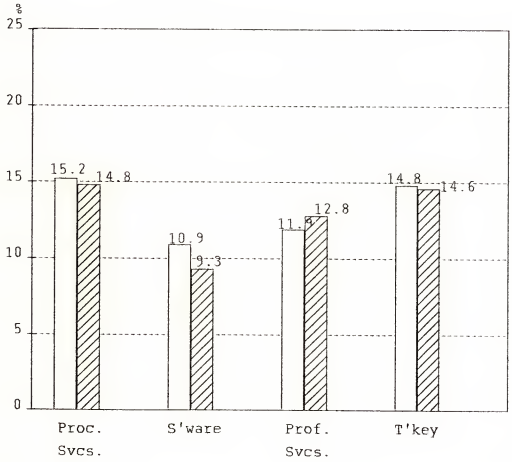


Note: Data are for public companies on a fiscal year basis.
Values are in $000's.

INPUT

AVG. RETURN ON EQUITY

(Four Sectors, 1983-1984)



Note: Data are for public companies on a fiscal year basis.

INPUT

SECTOR COMPARISON

- GTEDS MAY USE THE CHARACTERISTIC FINANCIAL PERFORMANCE OF A SECTOR IN CONJUNCTION WITH ITS ACQUISITION OBJECTIVES. EXAMPLES FOLLOW.

- IF GTEDS WISHES TO OPTIMIZE REVENUE GENERATION FROM ASSETS A PROFESSIONAL SERVICES ORIENTATION IS DESIRABLE. P.S. GENERATES $1.71 IN REVENUES FROM EACH DOLLAR IN ASSETS, MORE THAN TWICE THE RATES OF PROCESSING AND SOFTWARE AND 68% HIGHER THAN TURNKEY.

- PROFITABILITY IS LOWER HOWEVER AND THE RETURN ON TOTAL ASSETS IS 5.9%. IT IS HIGHER HOWEVER THAN THE TELEPHONE INDUSTRY (ABOUT 5%) AND MATERIALLY HIGHER THAN GTE (3.9% IN 1983).

- IF GTEDS WISHES TO MAXIMIZE EARNINGS IT SHOULD FOCUS ON PROCESSING SERVICES WHERE MARGINS ARE HIGHEST AND VERY IMPORTANTLY MORE STABLE DUE TO THE RECURRING NATURE OF REVENUES, WHILE TURNKEY SYSTEMS MIGHT SEEM A LOGICAL SECOND CHOICE UNDER THE CRITERION, MARGINS HAVE DECAYED SUBSTANTIALLY IN 1985 IN THE TURNKEY SECTOR.

INPUT

SECTOR COMPARISON (continued)

- IF GTEDS SEEKS MAXIMUM REVENUE FROM A SMALLER STAFF, SOFTWARE IS A LOGICAL EMPHASIS WITH REVENUES PER EMPLOYEE 34% HIGHER THAN PROCESSING AND 49% HIGHER THAN PROFESSIONAL SERVICES.

- FROM A RETURN OF EQUITY STANDPOINT SOFTWARE IS CLEARLY SUB-STANDARD. IN COMPARING R.O.E.'S TO TELEPHONE OPERATIONS IT MUST BE REMEMBERED THAT TELCO'S CARRY VERY SUBSTANTIAL DEBT WHILE C.S. COMPANIES HAVE NEGLIGABLE DEBT.

INPUT

A LOOK AT 1985

- THE FOLLOWING DATA EXAMINES THE FOUR SECTORS' PERFORMANCE ON A QUARTERLY BASIS INTO 1985. WHILE THERE IS MUCH POSITIVE ABOUT THE INDUSTRY AND FORECAST GROWTH REMAINS STRONG BUT REDUCED FROM FORMER LEVELS, RECENT RESULTS TEMPER HISTORICAL HIGH ENTHUSIASM.

INPUT

EARNINGS AND REVENUE CHANGES

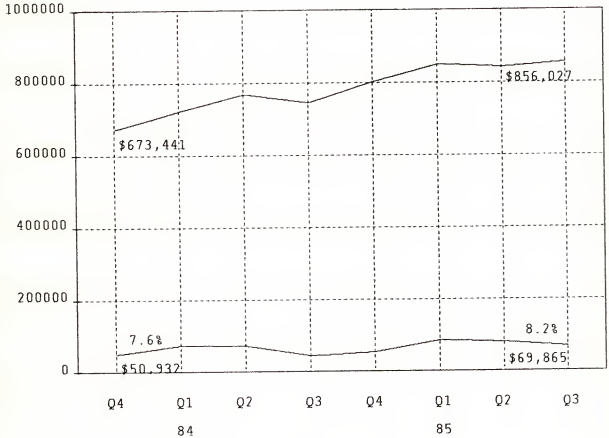
PUBLIC COMPANIES

1983 to 1984	
REVENUE	+25.5%
EARNINGS	+22.2%
MARGIN	7.0%
Q1 84 to Q1 85	
REVENUE	+16.4%
EARNINGS	-17.7%
MARGIN	5.4%
Q2 84 to Q2 85	
REVENUE	+14.5%
EARNINGS	-14.0%
MARGIN	5.3%
Q3 84 to Q3 85	
REVENUE	+13.3%
EARNINGS	-12.0%
MARGIN	4.9%

INPUT

PROCESSING QUARTERLY RESULTS

Q4 1983 THRU Q3 1985

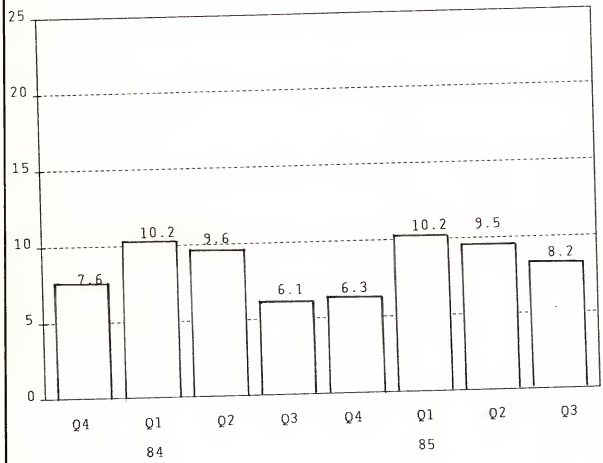


Notes: 000 omitted; upper line revenue;lower line net earnings

INPUT

PROC. QTRLY. NET MARGINS

Q4 1983 THRU Q3 1985

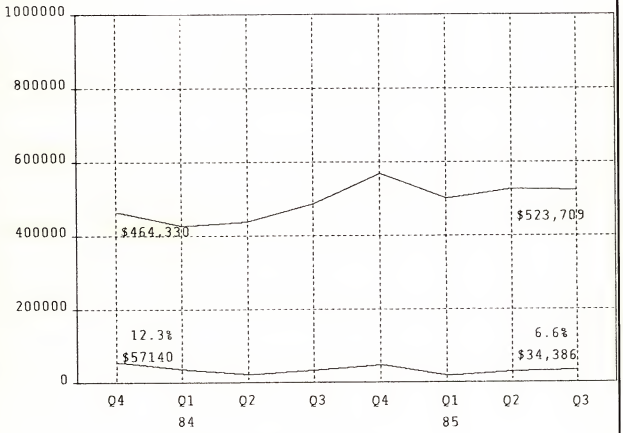


Mean=8.45%;SD=1.67%

INPUT

SOFTWARE QUARTERLY RESULTS

Q4 1983 THRU Q3 1985

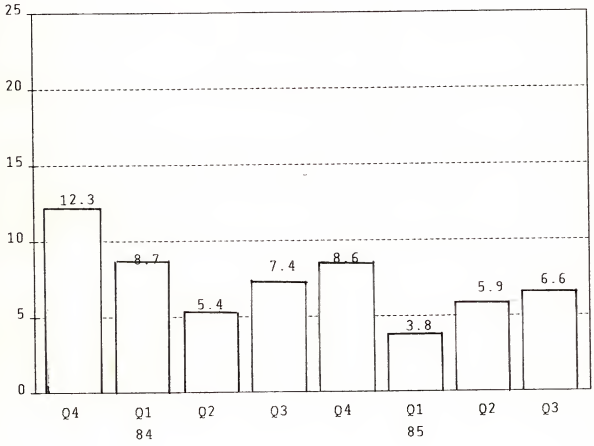


Notes: Same conventions as Processing.

INPUT

S'WARE QTRLY. NET MARGINS

Q4 1983 THRU Q3 1985



Mean=7.34%; SD=2.54%

INPUT

QUARTERLY COMMENTS

PROCESSING

- POINT-TO-POINT (8 QUARTERS) REVENUES INCREASED 27.1% WHILE EARNINGS GREW 37.2% FOR THESE COMPANIES. A DROP IN REVENUES AND EARNINGS IS CLEARLY DISCERNABLE IN LATE 1984.
- MARGINS AVERAGED 8.45% DURING THE PERIOD WITH SOME SEASONAL EFFECTS BUT NO TREND DISCERNABLE.

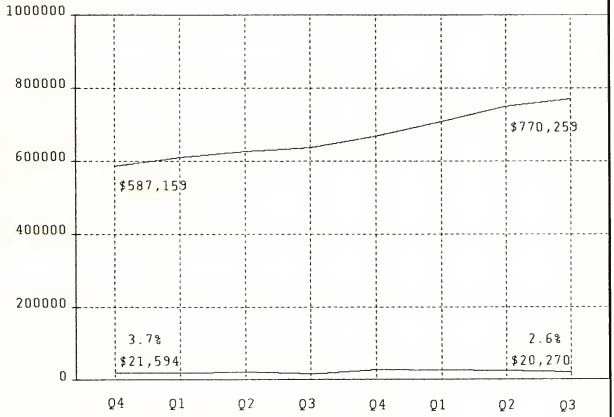
SOFTWARE

- POINT-TO-POINT REVENUES INCREASED ONLY 12.8% AND HAVE NOT RECOVERED TO Q4 1984 HIGHS. EARNINGS DURING THE SAME INTERVAL ARE OFF 39.2%.
- MARGINS ARE VOLATILE ABOUT WHAT APPEARS TO BE A DISTINCT DOWNWARD PRESSURE.

INPUT

PRO. SVC. QUARTERLY RESULTS

Q4 1983 THRU Q3 1985

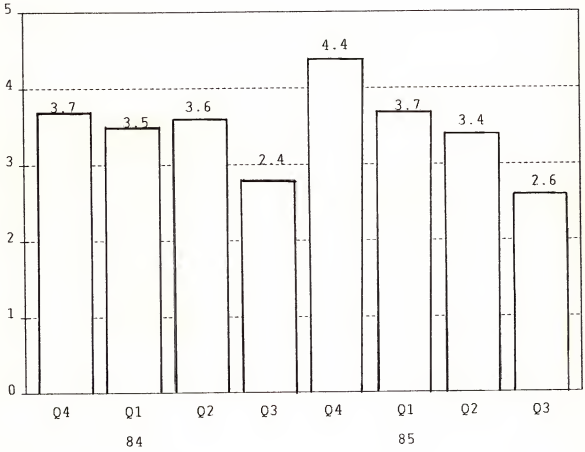


Notes: Conventions same as Processing.

INPUT

P. SVC. QTRLY NET MARGINS

Q4 1983 THRU Q3 1985

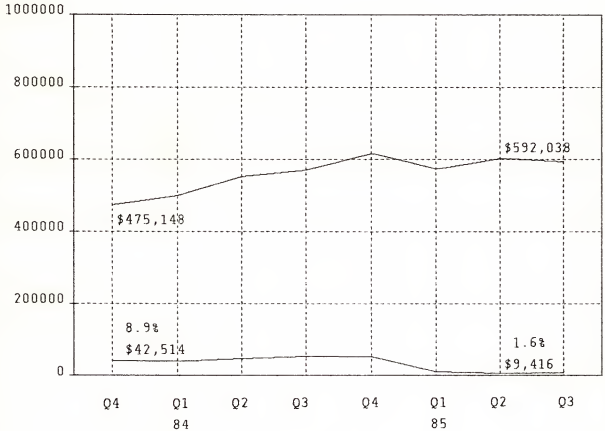


Mean=3.46%;SD=0.56% NOTE DIFFERENT SCALE

INPUT

TURNKEY QUARTERLY RESULTS

Q4 1983 THRU Q3 1985

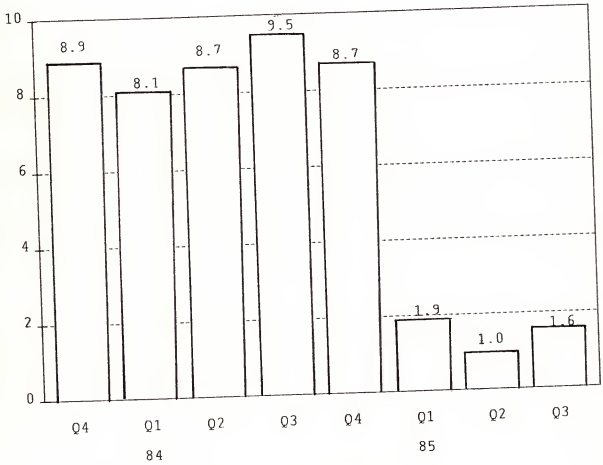


Notes: Conventions same as Processing.

INPUT

TKY QTRLY. NET MARGINS

Q4 1983 THRU Q3 1985



Mean=6.05%; SD=3.79%. NOTE DIFFERENT SCALE

INPUT

PROFESSIONAL SERVICES

- POINT-TO-POINT REVENUE GROWTH IS THE STRONGEST AND SMOOTHEST OF THE FOUR GROUPS CLIMBING 31.2%. EARNINGS ARE ESSENTIALLY FLAT WHICH MEANS MARGINS ARE DOWN. PTP EARNINGS ARE OFF 6.1%.
- MARGINS ARE LOW, AVERAGING 3.46% FOR THE PERIOD AND ARE IN A YEAR-LONG DOWNTREND.

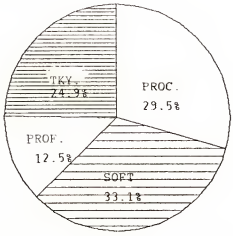
TURNKEY

- POINT-TO-POINT REVENUES ARE UP 24.6% WHILE EARNINGS ARE OFF A MASSIVE 77.9%. NEITHER REVENUES NOR EARNINGS HAVE EXCEED Q4 84 HIGHS. MARGINS HAVE COLLAPSED.
- MARGINS WERE RELATIVELY STABLE UNTIL 1985 WHEN THEY SHRANK DRAMATICALLY WITH NO SIGN OF RECOVERY IN SIGHT.

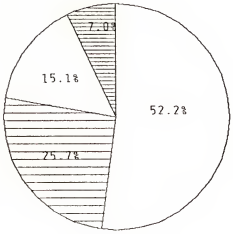
INPUT

EARNINGS SHARE COMPARISON

Q4 83 vs. Q3 85



$172,180



$133,937

Note: Charts show share of total net earnings by delivery mode.
000 omitted. Observe decrement in total earnings for 110 public companies.

INPUT

EARNINGS COMMENTS

- NOTE THAT IN THIS 8 QUARTER SPREAD COMPARISON, TOTAL EARNINGS FOR THE UNIVERSE OF COMPANIES IS DOWN 22.2%.
- ALSO NOTE THE RADICAL SHIFT IN SHARE. THIS IS CAUSED MAINLY BY THE EARNINGS COLLAPSE IN TURNKEY. THESE FELL 82% IN THE FIRST 3 QUARTERS OF 1985 VS 1984. DURING THE SAME PERIOD SOFTWARE EARNINGS FELL 12.0%.
- THIS PHENOMENON EMPHASIZES THE IMPORTANCE OF INDIVIDUAL COMPANY ANALYSIS. EACH SECTOR HAS ITS "WINNERS" BUT THERE ARE FEWER THAN THERE ONCE WERE.

INPUT

RELATIVE VALUE

- IT IS OBVIOUS THAT A KEY ASPECT OF THE ACQUISITION ACTIVITY IS THE VALUE OF A COMPANY. IN CLASSICAL INVESTMENT THEORY THIS IS CLOSELY RELATED TO THE FUTURE EARNINGS STREAM. VALUATION METHODOLOGIES CAN BE EXTREMELY COMPLEX. AS A USEFUL RULE OF THUMB FOR PRELIMINARY ASSESSMENTS, THE FOLLOWING IS SUGGESTED:

$$VI = \frac{(RG + EG + MAR)}{P/E}$$

WHERE: VI IS VALUE INDEX

RG IS REVENUE GROWTH IN %

EG IS EARNINGS GROWTH IN %

MAR IS NET MARGIN IN %

P/E IS PRICE/EARNINGS

INPUT

RELATIVE VALUE (continued)

AS THE VI INCREASES WE HAVE INCREASING "GOODNESS"

1984 MEAN VI'S

INDUSTRY	RG	EG	MAR	SUM	P/E	VI
PROC.	19.9	12	8.8	40.7	18.5	2.17
SWARE	35.8	-2.9	6.1	39.0	33.6	1.16
P.SVC	14.4	23.6	3.5	41.5	14.5	2.86
TKY	30.8	27.1	8.2	66.1	25.5	2.59
ALL	100.9	59.8	26.6	187.3	92.1	2.03

- THESE DATA WOULD SUGGEST THAT SOFTWARE COMPANIES WERE RATHER "OVERVALUED" WHILE PROFESSIONAL SERVICE COMPANIES WERE "UNDER VALUED" BASED ON ACTUAL FINANCIAL PERFORMANCE IN THE PRIOR YEAR.

INPUT

RELATIVE VALUE (continued)

SELECTED COMPANY VI'S

	SUM	P/E	VI
ADP	41.3	15.8	2.61
SHARED MEDICAL	58.8	19.6	3.00
F.D.R.	80.9	17.5	4.62
QUOTRON	49.4	10.5	4.84
TELERATE	78.6	21.4	3.67
SEI	-19.5	35.9	-0.54
TELECREDIT	-5.3	30.5	-0.17
ALL PROC. COS.	40.7	18.5	2.20

- ON THIS MEASURE (AND AT THAT TIME) QUOTRON AND F.D.R. (FIRST DATA RESOURCES) SHOWED PARTICULARLY HIGH VI'S. THIS WOULD SUGGEST FURTHER REVIEW OF THESE COMPANIES.

INPUT

RELATIVE VALUE (continued)

- SEI & TELECREDIT - THOUGH AWARDED SUBSTANTIAL MULTIPLES - DO NOT APPEAR TO OFFER VERY GOOD VI'S. BOTH EXPERIENCED MASSIVE DROPS IN EARNINGS BUT REMAINED PROFITABLE.

- THIS TECHNIQUE PERMITS A SIMPLE, FAST AND STRAIGHT-FORWARD WAY TO ASSESS MARKET VALUATIONS (OR ASKING PRICES) IN THE CONTEXT OF SPECIFIC RECENT PERFORMANCE. IT SHOULD BE EMPLOYED IN THE CONTEXT OF COMPANY KNOWLEDGE AND WITH MORE DETAILED ANALYSIS WHENEVER POSSIBLE.

INPUT

TWO RECENT MAJOR TRANSACTIONS

	ADR AMERITECH	ACI U.S. WEST
PURCHASE PR.	$ 215,000	$ 120,000
12 MONTH REVENUE	148,348	28,448
12 MONTH NET	2,781	3,494
NET MARGIN	1.87%	12.28%
TRADING	20/SHARE	17/SHARE
OFFER	32/SHARE	27/SHARE
PREMIUM	60.00%	59.00%
BUY P/E	77.3	34.6
REVENUE MULTIPLIER	1.45	4.25
RECENT FY BOOK	59,851	21,742
BOOK MULTIPLIER	3.6	5.5
RECENT ASSETS	115,007	31,535
ASSETS MULTIPLIER	1.87	3.81

NOTE: DOLLAR VALUES (EXCEPT SHARE PRICE) ARE $000

INPUT

TRANSACTION COMMENTARY

- NOTE THAT IN THESE TWO RECENT MAJOR ACQUISITIONS BY RBOC'S THAT VERY SUBSTANTIAL PREMIA WERE PAID TO THE MARKET, BOTH ABOUT 60%.

- PRIOR TO INCURRING SERIOUS LOSSES IN Q2 85, ADR HAD BEEN A RAPIDLY GROWING SYSTEMS SOFTWARE COMPANY WITH A STRONG POSITION IN UTILITIES, DBMS'S AND 4GL'S. DIFFICULTIES WERE ENCOUNTERED WHEN IBM ANNOUNCED A CREDIBLE RELATIONAL DB AND "IDEAL," THE ADR 4GL, ENCOUNTERED WELL-PUBLICIZED PERFORMANCE PROBLEMS RELATED TO TRANSACTION RATES. THESE FACTORS - COMPOUNDED BY SLOWING GROWTH IN OVERALL SOFTWARE SALES - PUSHED THE COMPANY INTO WEAKENED PERFORMANCE. EARNINGS HAD ALWAYS POSSESSED CONSIDERABLE VOLATILITY.

- THE RATIONAL BUSINESS PURPOSE MOTIVATING THE ACQUISITION REMAINS OPAQUE. IN MARCH '86 AN OFFICER OF THE COMPANY COMMENTED "IT'S TOO EARLY TO TELL IF THERE IS ANY SYNERGY" BETWEEN AMERITECH & ADR.

INPUT

TRANSACTION (continued)

- THE PROBLEMS EXISTING IN 1985 REMAIN IN 1986 AND IT SEEMS UNLIKELY THAT ADR WILL OVERCOME THEM IN THE NEAR FUTURE. ADR WOULD HAVE CONTRIBUTED 2.8¢ PER SHARE IN 1985 ON THE COMPANY'S $11.02/SHARE EARNINGS. THE ACQUISITION REPRESENTS 8.8. DAYS OF AMERITECH'S TOTAL 1985 REVENUES. CASH ACQUISITION.

- THE RECENTLY ANNOUNCED PURCHASE OF APPLIED COMMUNICATIONS, INC. IS CONCURRENT WITH THE U.S. WEST'S INTEREST IN FINANCIALLY RELATED SERVICES. 1985 SAW THE ACQUISITION OF TWO LEASING COMPANIES.

- ACI IS A MAJOR PROVIDER OF TRANSACTION SYSTEMS SOFTWARE FOR ATM'S, TELLER TERMINALS AND RELATED APPLICATIONS UNDER THE "BASE 24" BRAND.

- REVENUE GROWTH HAS AVERAGED 34%/YR FOR THE LAST 5 YEARS WITH EARNING GROWINGS IN EXCESS OF 50%/YR FROM LOW LEVELS TO THE CURRENT 12% NET MARGIN.

INPUT

TRANSACTIONS (continued)

- DESPITE VERY STRONG PERFORMANCE, MORE THAN 4X REVENUES, 5X BOOK AND 34.6X EARNINGS SEEM "RICH."
- ASSUMING 34%/YEAR EARNINGS GROWTH, THIS TRANSACTION WILL SHOW A POSITIVE IRR (BASED ON NET EARNINGS) IN 1995. AT THAT TIME ACI WOULD EARN $60 MILLION ON REVENUES OF $500 MILLION.
- APPARENTLY ACI HAS GREAT STRATEGIC SIGNIFICANCE IN U.S. WEST'S PLANS TO WARRANT THE PRICE PAID. THE ACQUISITION REPRESENTS 5.7 DAYS OF REVENUE OR 3.6¢ SHARE ON 1985 EPS OF $9.68. ALSO A CASH ACQUISITION.
- IN INPUT'S OPINION THESE TWO BUYS ARE EXCELLENT DEMONSTRATIONS OF HOW NOT TO ACQUIRE. ADR WAS APPARENTLY PURCHASED AS A "PORTFOLIO" ITEM WITH NO APPARENT FIT TO THE ACTIVITY OF THE PARENT. ACI - THOUGH A POSSIBLE FIT IS PRESENT - REQUIRES VERY UNLIKELY GROWTH TO PAY OFF REASONABLY.

INPUT

PARAMETERS OF NOMINAL $100M BUSINESS UNIT

(Pro-Rata On Mean 1984 Industry Values)

	$M REV	$M NET	$M TOTAL ASSETS	PERSONNEL	$M EQUITY
PROC.	20.87	1.837	25.14	275	12.40
SWARE	18.13	1.106	20.14	179	12.00
PROF	32.16	1.126	18.81	470	7.81
TKY	28.84	2.365	28.27	284	16.11
	100.00	6.434	92.36	1,208	48.32

NET MAR	6.43%
R.O.A.	6.97%
R.P.E.	$ 82,781
R.O.E.	13.32%

INPUT

NOMINAL UNIT

- THIS PRO-FORM INDICATES HOW GTEDS-CSD WOULD "LOOK" IF IT EXISTED AT THE PRESENT TIME, HAD $100 MILLION IN REVENUES AND HAD REVENUES PROPORTIONAL TO THESE IN THE CURRENT CSD BUSINESS PLAN. ALSO ASSUMED IS THAT THE UNIT WOULD BE AVERAGE IN ITS PERFORMANCE ACROSS ALL FOUR LINES OF BUSINESS.

- NOTE THE REQUIREMENT FOR 1,208 PERSONS. TO REACH THIS GOAL IN 1990 IMPLIES A VERY SUBSTANTIAL RECRUITING EFFORT. NOTE ALSO THE DISPROPORTIONATE NUMBER OF PERSONS (39%) NEEDED TO MEET THE PROFESSIONAL SERVICES REVENUE "QUOTA."

- COMPARING REVENUE PER EMPLOYEE AT $82.78K FOR CSD VERSUS $70.24 FOR ALL OF GTE SHOWS A FAVORABLE 17.85% SURPLUS FOR CSD. IN THIS REGARD, IT IS WORTH NOTING THAT GTE EMPLOYMENT IS HIGH FOR TELEPHONE OPERATIONS WHICH NORMALLY ACHIEVE 90-100K REVENUES PER EMPLOYEE.

INPUT

NORMINAL (continued)

- NET MARGIN IS SLIGHTLY BELOW THE INDUSTRY AGGREGATE AT 6.43% VS 6.79%, AGAIN DUE TO THE P.SVC. WEIGHTING. FROM A PURELY FINANCIAL STANDPOINT IT MIGHT BE USEFUL TO CONSIDER DE-EMPHASIZING PROF. SVCS. IF NET PROFITS ARE IMPORTANT. IT IS WORTH NOTING IN THIS RESPECT THAT IN 1983 GTE AS A UNIT RETURNED 7.30% OF SALES AS NET PROFIT.

- THIS UNIT'S RETURN ON ASSETS AT 6.97% IS MATERIALLY SUPERIOR TO GTE'S AT 3.92%. FROM A REVENUE GENERATION PERSPECTIVE GTE GENERATES $0.53 PER ASSET DOLLAR WHILE THIS UNIT WOULD GENERATE $1.08.

- SINCE THERE IS TYPICALLY LITTLE L.T. DEBT USED BY SERVICE COMPANIES THE CSD UNIT'S R.O.E. OF 13.32% COMPARES VERY FAVORABLY TO THE 5.95% RETURN ON EQUITY PLUS L.T. DEBT & PREFERRED EXHIBITED BY GTE.

INPUT

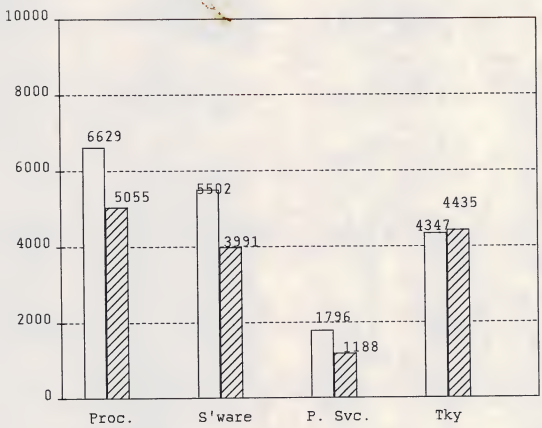
COMMENTS

- THE DATA STRONGLY SUGGEST THAT GTEDS SHOULD:
  1. SEEK VALUE FIRST: I.E..
  2. ACQUIRE ONLY THOSE WITH SIGNIFICANT ASSETS EARNING STABLE RETURNS.
  3. PAY LOW RELATIVE MULTIPLES TO THE EXTENT POSSIBLE.
  4. DIVERSIFY TO REDUCE RISK OF A SINGLE LARGE ACQUISITION.
  5. WATCH TIMING FACTORS WITH RESPECT TO THE PUBLIC MARKETS.
  6. AVOID BIDDING AGAINST NAIVE BUYERS.
  7. LEAD WITH THE CALCULATOR, NOT THE HEART.
- CONSIDER THAT A SMALL PART OF AN INDUSTRY GROUP IS BEING ACQUIRED, NOT THE INDUSTRY. RISK AND VOLATILITY IS MUCH HIGHER AT THE FIRM LEVEL.

INPUT

MARKET VALUE

1983 & 1984

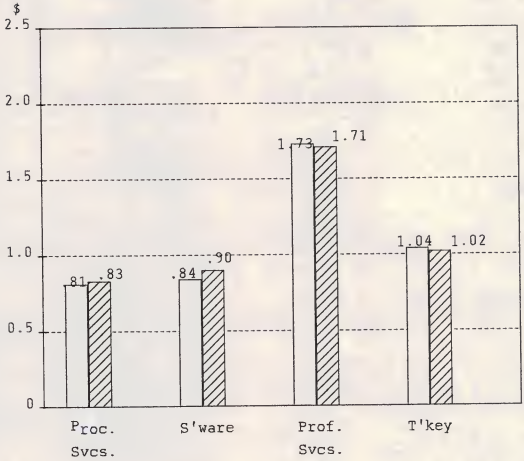


Note: Values are in $ Millions

OCT

$ SALES PER $ ASSETS

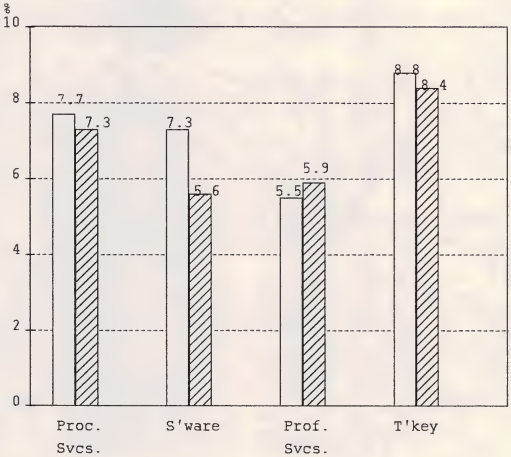
(Four Sectors, 1983-1984)



Note: Data are for public companies on a fiscal year basis.

AVG. RETURN ON TOTAL ASSETS

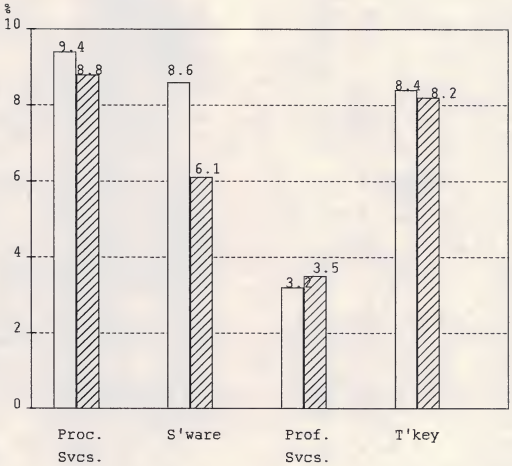
(Four Sectors, 1983-1984)



Note: Data are for public companies on a fiscal year basis.

AVERAGE NET MARGINS

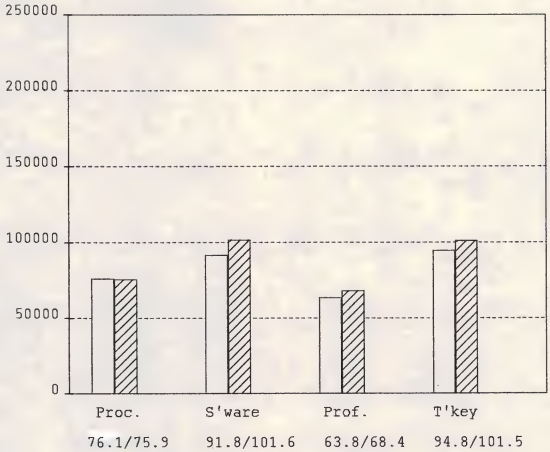
(Four Sectors, 1983-1984)



Note: Data are for public companies on a fiscal year basis.

AVERAGE REVENUE PER EMPLOYEE

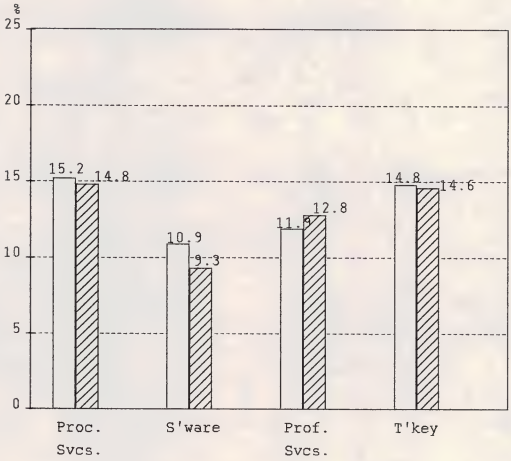
(Four Sectors,1983-1984)



Note: Data are for public companies on a fiscal year basis.
Values are in $000's.

AVG. RETURN ON EQUITY

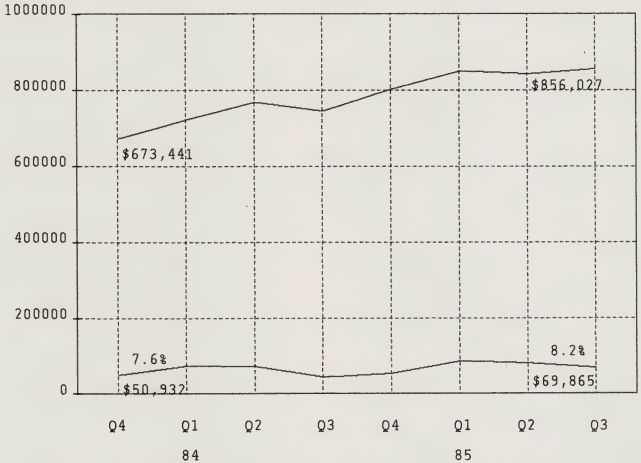
(Four Sectors, 1983-1984)



Note: Data are for public companies on a fiscal year basis.

PROCESSING QUARTERLY RESULTS

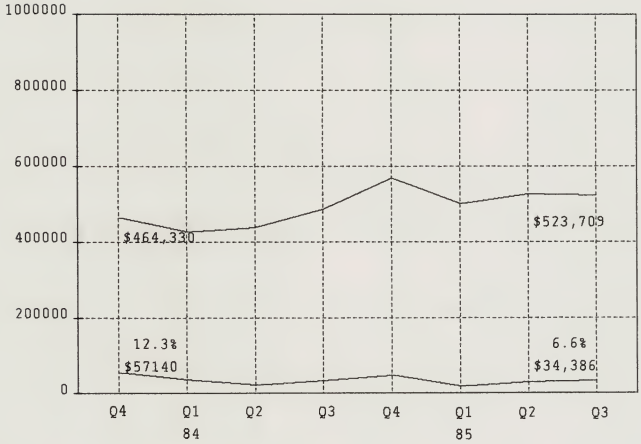
Q4 1983 THRU Q3 1985



Notes: 000 omitted; upper line revenue;lower line net earnings

SOFTWARE QUARTERLY RESULTS

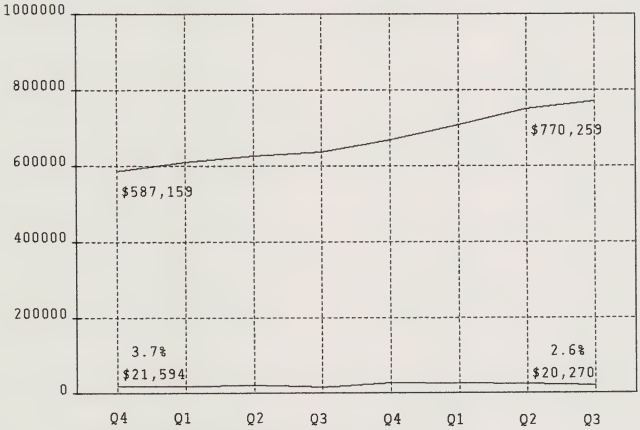
Q4 1983 THRU Q3 1985



Notes: Same conventions as Processing.

PRO. SVC. QUARTERLY RESULTS

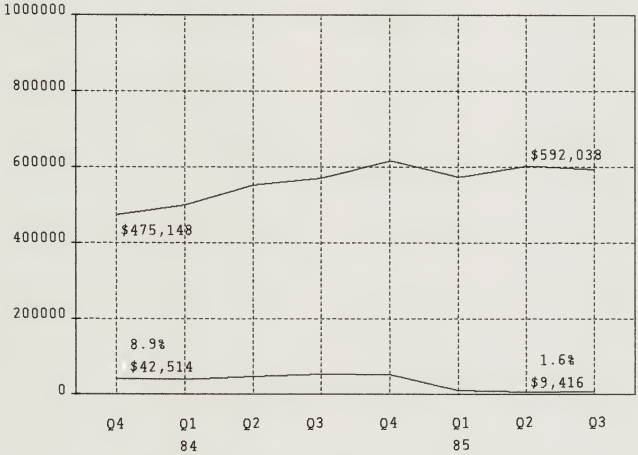
Q4 1983 THRU Q3 1985



Notes: Conventions same as Processing.

TURNKEY QUARTERLY RESULTS

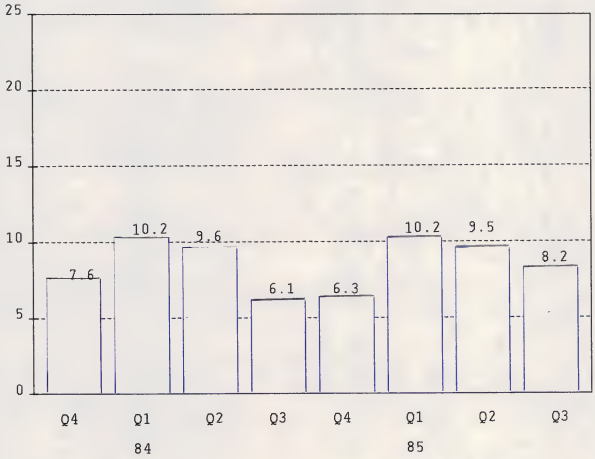
Q4 1983 THRU Q3 1985



Notes: Conventions same as Processing.

PROC. QTRLY. NET MARGINS

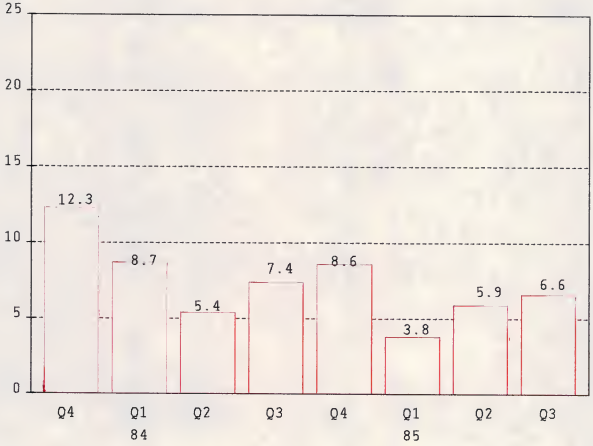
Q4 1983 THRU Q3 1985



Mean=8.45%;SD=1.67%

S'WARE QTRLY. NET MARGINS

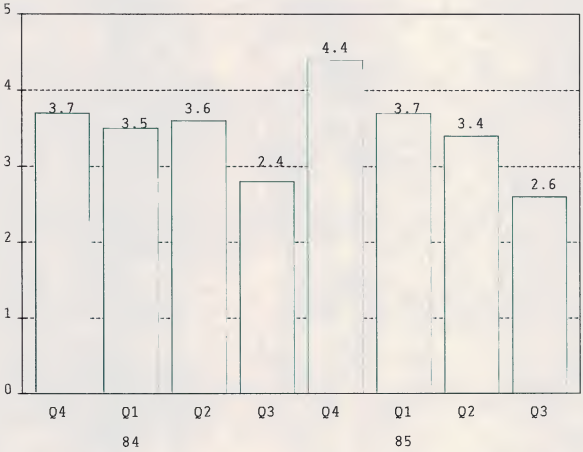
Q4 1983 THRU Q3 1985



Mean=7.34%; SD=2.54%

P. SVC. QTRLY NET MARGINS

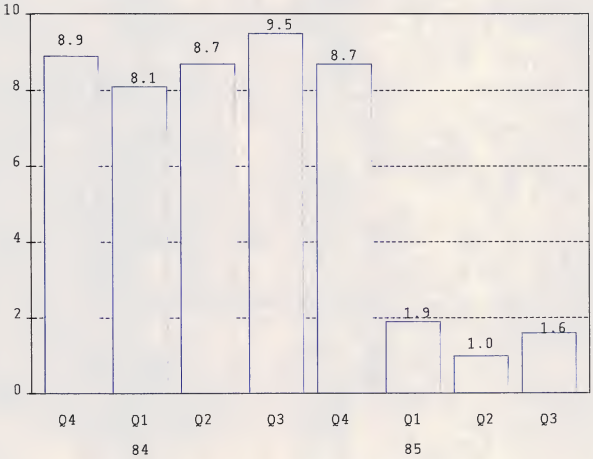
Q4 1983 THRU Q3 1985



Mean=3.46%;SD=0.56% NOTE DIFFERENT SCALE

TKY QTRLY. NET MARGINS

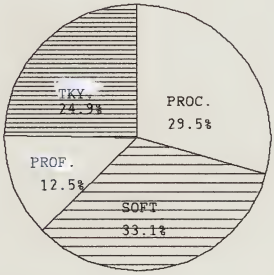
Q4 1983 THRU Q3 1985



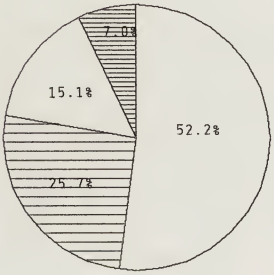
Mean=6.05%; SD=3.79%. NOTE DIFFERENT SCALE

EARNINGS SHARE COMPARISON

Q4 83 vs. Q3 85



$172,180



$133,937

Note: Charts show share of total net earnings by delivery mode.
000 omitted. Observe decrement in total earnings for 110 public companies.

PARAMETERS OF NOMINAL $100M BUSINESS UNIT
(Pro-Rata On Mean 1984 Industry Values)

	$M Rev	$M Net	$M Total Assets	Personnel	$M Equity
Proc	20.87	1.837	25.14	275	12.40
Sware	18.13	1.106	20.14	179	12.00
Prof	32.16	1.126	18.81	470	7.81
Tky	28.84	2.365	28.27	284	16.11
	100.00	6.434	92.36	1,208	48.32

Net Mar		6.43%			
R.O.A.			6.97%		
R.P.E.				$ 82,781	
R.O.E.					13.32%

INPUT